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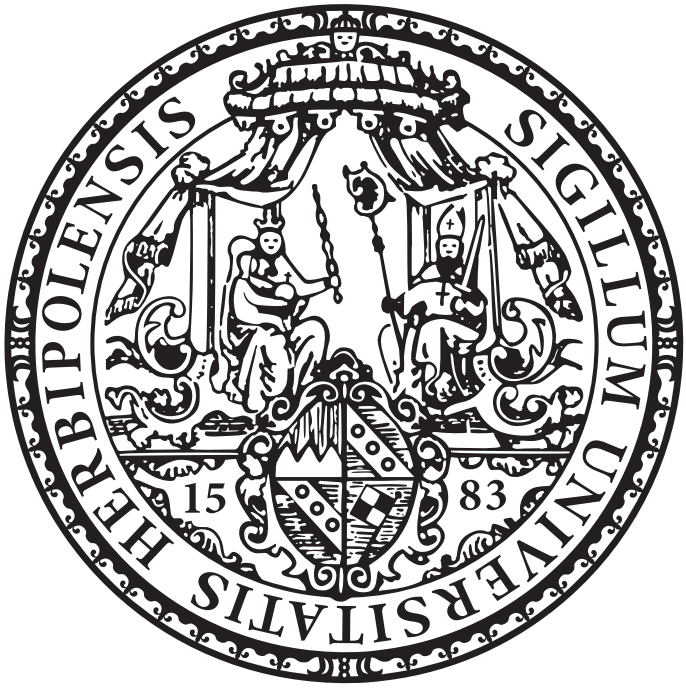
Empirical Studies on Accounting

Shareholders' Perceptions of Earnings Quality



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Zusammenfassung

Die optimale Allokation der Ressourcen ist Ziel ökonomischen Handelns und stellt eine grundlegende Voraussetzung für wirtschaftlichen Wohlstand dar. Der Kapitalmarkt ist in der heutigen Unternehmenswelt wesentlich an einer effizienten Ressourcenallokation beteiligt. Aus diesem Grund ist ein funktionierender Kapitalmarkt eine Bedingung für ein erfolgreiches Wirtschaftssystem. Die Trennung von Eigentum und Kontrolle hat allerdings eine asymmetrische Informationsverteilung sowie Interessenkonflikte zur Folge, welche die effiziente Funktionsweise des Kapitalmarkts negativ beeinträchtigen können. Eine Lösung dieser Problemstellung, welche in der Prinzipal-Agenten-Theorie erörtert wird, ist daher erstrebenswert.

Anhand der Rechnungslegung kann durch die Bereitstellung von Informationen durch den Manager—den Agenten der Prinzipal-Agenten-Beziehung—maßgeblich zur Linderung der beschriebenen Problematik zwischen Manager und Eigentümer—dem Prinzipal—beigetragen werden. Dies kann aus theoretischer Sicht nur gelingen, wenn die bereitgestellten Rechnungslegungsinformationen sowohl relevant als auch verlässlich sind und somit eine hohe Qualität aufweisen. Folglich beschäftigen sich zahlreiche Studien mit dem Thema Rechnungslegungsqualität und versuchen eine Begriffsdefinition zu erarbeiten, eine empirische Messung zu ermöglichen und Einflussfaktoren zu erforschen. Hierbei ist die Wahrnehmung der Aktionäre bezüglich der Rechnungslegungsqualität von besonderer Bedeutung, da die Aktionäre einen wichtigen Bestandteil funktionierender Kapitalmärkte darstellen und weithin als primäre Adressaten von Jahresabschlussinformationen angesehen werden.

In der Vergangenheit wurde das Vertrauen der Aktionäre in die Rechnungslegungsqualität wiederholt strapaziert. So wurde die Qualität der Rechnungslegungsinformationen beispielsweise infolge der Bilanzskandale zu Beginn des Jahrtausends oder während der Banken- und Finanzkrise kritisch hinterfragt. In diesem Zusammenhang wurde speziell das Vertrauen der Aktionäre in die Unabhängigkeit des Abschlussprüfers und die Integrität der Vorstände und Aufsichtsräte thematisiert. Daneben ist allerdings auch die Mitwirkung der Aktionäre durch die Ausübung ihrer Stimmrechte im Rahmen der Hauptversammlung der Unternehmen zu einem Gegenstand der Forschung und der politischen Diskussion geworden. So setzte sich die Europäische

Union in ihrer kürzlich veröffentlichten Richtlinie 2017/828/EU zur Förderung der langfristigen Mitwirkung der Aktionäre zum wiederholten Male für eine Stärkung der Stimmrechte und eine Vereinfachung der Stimmrechtsausübung ein. Die Abstimmungsergebnisse der Hauptversammlungen ermöglichen zudem einen Einblick in die Perspektive der Aktionäre und werden daher zunehmend Gegenstand empirischer Untersuchungen im Bereich der Rechnungslegungsforschung.

Vor diesem Hintergrund soll die vorliegende Dissertation zu einem tieferen Verständnis der Sichtweise der Aktionäre in Bezug auf die Rechnungslegungsqualität kapitalmarktorientierter Unternehmen beitragen. Insbesondere stehen Indikatoren für die Wahrnehmungen der Rechnungslegungsqualität, der Einfluss der Unabhängigkeit des Abschlussprüfers auf diese Wahrnehmungen und die Einschätzung der Aktionäre hinsichtlich der Bedeutung der Rechnungslegungsqualität im Fokus. Dabei werden die Kapitalmarktreaktionen auf Gewinnveröffentlichungen, Größen zur Messung der Rechnungslegungsqualität und der Unabhängigkeit des Abschlussprüfers sowie das Abstimmungsverhalten der Aktionäre auf Hauptversammlungen untersucht.

Nachdem in der Einleitung in Kapitel 1 die Motivation sowie die Zusammenfassungen der Bestandteile der Arbeit dargelegt werden, beschäftigt sich Kapitel 2 zunächst mit dem Zweck der Rechnungslegung im Kontext der Prinzipal-Agenten-Theorie. Anschließend wird in diesem Zusammenhang eine Definition des Begriffs Rechnungslegungsqualität erarbeitet. Darüber hinaus wird die Verbindung zwischen der Rechnungslegung und dem Kapitalmarkt hergestellt. Abschließend wird die Rolle des Abschlussprüfers und dessen Unabhängigkeit im Rahmen der Prinzipal-Agenten-Beziehung erörtert und skizziert, wie die Unabhängigkeit des Abschlussprüfers sowie die Prüfungsqualität definiert und beeinflusst werden können.

Das dritte Kapitel behandelt die Bedeutung der Abstimmung der Aktionäre auf der Hauptversammlung im Kontext der Prinzipal-Agenten-Theorie und erläutert die gesetzlichen Regelungen zu den Aktionärsrechten. Dabei wird insbesondere auf die Unterschiede zwischen Deutschland und den USA im Hinblick auf die Rechte der Aktionäre sowie die Tagesordnungspunkte der Hauptversammlung eingegangen, da sich jeweils eine der folgenden Studien mit den Abstimmungsergebnissen von Hauptversammlungen amerikanischer bzw. deutscher Unternehmen beschäftigt.

Die erste empirische Studie, die in Kapitel 4 vorgestellt wird, untersucht die Abstimmungsergebnisse der Bestätigung des Abschlussprüfers durch die Aktionäre in den USA. Obwohl diese Abstimmung in den USA weder verpflichtend durchzufüh-

ren noch rechtlich bindend ist, hob die US-Börsenaufsichtsbehörde deren Bedeutung durch eine Änderung der Offenlegungspflichten für die Abstimmungsergebnisse hervor. Es stellt sich die Frage, ob die Abstimmungsergebnisse der Bestätigung des Abschlussprüfers aussagekräftig im Hinblick auf die Wahrnehmungen der Aktionäre bezüglich der Rechnungslegungsqualität sind. Das Kapitel beschäftigt sich mit der genannten Fragestellung und zeigt auf Basis einer Ereignisstudie, dass die Abstimmungsergebnisse der Bestätigung des Abschlussprüfers mit den Kapitalmarktreaktionen auf unerwartete Gewinne zum Zeitpunkt der Gewinnveröffentlichungen zusammenhängen. Darüber hinaus liefern die Ergebnisse Hinweise dafür, dass der beobachtete Effekt von dem Grad der Informationsasymmetrie zwischen Managern und Aktionären abhängt. Dementsprechend unterstützt die empirische Evidenz dieser Studie die Annahme, dass die Abstimmungsergebnisse der Bestätigung des Abschlussprüfers rechnungslegungsbezogene Informationen darstellen, welche den Aktionären beim Treffen ihrer Investitionsentscheidungen zu Gute kommen können. Angesichts der Erkenntnisse erscheint es sinnvoll, die Abstimmungsergebnisse offenzulegen und die Diskussion um eine verpflichtende Abstimmung der Aktionäre über die Bestätigung des Abschlussprüfers in den USA aufrechtzuerhalten.

Das fünfte Kapitel befasst sich mit dem Einfluss der wirtschaftlichen Bedeutung eines Mandanten auf die wahrgenommene Rechnungslegungsqualität. Es wird erforscht, ob und wann Aktionäre die wirtschaftliche Abhängigkeit eines Abschlussprüfers von dem Mandanten als negativ erachten. Die empirische Evidenz einer Untersuchung der Geschäftsjahre 2010 bis 2014 einer Stichprobe amerikanischer Unternehmen, welche von einer Big 4 Abschlussprüfungsgesellschaft geprüft werden, deutet auf einen negativen Zusammenhang zwischen der wirtschaftlichen Bedeutung des Mandanten und der Wahrnehmung der Aktionäre hinsichtlich der Rechnungslegungsqualität hin. Die Ergebnisse werden dahingehend interpretiert, dass der Kapitalmarkt auch zehn Jahre nach Einführung des Sarbanes-Oxley Acts infolge der erwähnten Bilanzskandale weiterhin bezüglich der Unabhängigkeit des Abschlussprüfers besorgt ist. Insbesondere ist der Zusammenhang zwischen der wirtschaftlichen Bedeutung des Mandanten und der wahrgenommenen Rechnungslegungsqualität vor allem für Mandanten zu beobachten, welche sich eher in finanziellen Schwierigkeiten befinden. Die empirischen Ergebnisse zeigen daher, dass die wahrgenommene Unabhängigkeit des Abschlussprüfers von den Eigenschaften des Mandanten abhängen kann. Diese Erkenntnis könnte dazu motivieren weitere Mandantenmerkmale zu un-

tersuchen, um dadurch einen tieferen Einblick in die Wahrnehmungen der Aktionäre im Hinblick auf die Unabhängigkeit des Abschlussprüfers zu ermöglichen.

Die in Kapitel 6 vorgestellte Studie soll zu einem tieferen Verständnis der Einschätzungen der Aktionäre in Bezug auf die Bedeutung der Rechnungslegungsqualität beitragen. Die Studie beleuchtet insbesondere die Frage, ob die Rechnungslegungsqualität die Zufriedenheit der Aktionäre mit dem Vorstand und dem Aufsichtsrat eines Unternehmens beeinflusst. Zu diesem Zweck werden die Abstimmungsergebnisse bezüglich der Entlastung des Vorstands und des Aufsichtsrats von 1.237 Hauptversammlungen deutscher börsennotierter Unternehmen aus den Jahren 2010 bis 2015 untersucht. Die Betrachtung der Entlastung der Vorstands- und Aufsichtsratsmitglieder ist dabei besonders vorteilhaft, da diese einerseits obligatorisch bei der jährlichen Hauptversammlung und andererseits separat für Vorstand und Aufsichtsrat zu erfolgen hat. Dies ermöglicht eine Differenzierung zwischen der Zufriedenheit mit dem Vorstand und dem Aufsichtsrat der Gesellschaft und eine Analyse der Verantwortlichkeit für die Rechnungslegungsqualität aus Sicht der Aktionäre. Die empirischen Ergebnisse zeigen, dass die Rechnungslegungsqualität, welche anhand diskretionärer Periodenabgrenzungen gemessen wird, einen positiven Zusammenhang mit der Zufriedenheit der Aktionäre aufweist. Die hinsichtlich der Größenordnung und der statistischen Signifikanz schwächeren Ergebnisse bezüglich der Entlastung des Aufsichtsrats im Vergleich zur Entlastung der Vorstandsmitglieder implizieren, dass die Aktionäre überwiegend den Vorstand für die Rechnungslegungsqualität verantwortlich machen. Insgesamt unterstreicht die empirische Evidenz die Bedeutung der Rechnungslegungsqualität für die Aktionäre und vermittelt außerdem einen detaillierteren Einblick in die Sichtweise der Aktionäre.

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1 Introduction and Summary

"Economy is the art of making most of life."

— *George Bernard Shaw*

This quote originates from George Bernard Shaw, the winner of the 1925 Nobel Prize for Literature, and was recited by Gary S. Becker, the laureate of the Nobel Prize for Economics in 1992.[1] It implies that limited resources must be made available to those who can use them most efficiently for the benefit of the economy. Consistently, Healy and Palepu (2001, 407) state that "a critical challenge for any economy is the optimal allocation of savings to investment opportunities." In the modern business world, this allocation of funds is accomplished by the capital market, which is the reason why an efficient capital market is a prerequisite for a successful economy. However, asymmetric information and incentive problems due to the separation of ownership and control hamper the efficient functioning of the capital market. This phenomenon is known as the agency problem and can potentially cause a breakdown of the capital market (Healy and Palepu 2001).

In this context, accounting plays an essential role through the provision of information by the manager and is intended to contribute to solving or at least mitigating the agency problem between shareholders and managers (Healy and Palepu 2001; Lev and Ohlson 1982). From a theoretical point of view, however, this can succeed only if the accounting information is both relevant and reliable and, hence, of high quality. This is also demonstrated by the following quote, which stems from the speech given by the former chairman of the U.S. Securities and Exchange Commission (SEC) Arthur Levitt on "The Importance of High Quality Accounting Standards" at the Inter-American Development Bank (Levitt 1998, 80).

[1] See `https://www.nobelprize.org/prizes/economics/1992/press-release/`; accessed on October 1, 2018.

> *"I firmly believe that the success of capital markets is directly dependent on the quality of the accounting and disclosure system. Disclosure systems that are founded on high quality standards give investors confidence in the credibility of financial reporting – and without investor confidence, markets cannot thrive."*

The statement highlights very clearly not only the relevance of the quality of the accounting system, but also the importance of high earnings quality in general.[2] Therefore, it is not surprising that many studies deal with the definition, the measurement, and particularly the determinants of earnings quality (cf. Gaynor et al. 2016). Besides the mentioned accounting system and regulatory standards, many other factors influence earnings quality. For example, the company environment, the corporate governance system, the auditor, and also the management play an essential role in this context.

The speech of Levitt (1998, 79) also emphasizes the importance of shareholders and the fulfillment of their need for information by characterizing informed shareholders as "an important ingredient of liquid, stable capital markets." Moreover, the shareholders are widely considered to be among the main users of the financial statements (Khurana and Raman 2006; Lev and Ohlson 1982). This is why shareholders' perceptions of earnings quality and capital market research have long been in focus of the accounting literature (Kothari 2001). The relevance of shareholders' confidence in earnings quality was also repeatedly inflamed, for example, by the accounting scandals at the beginning of the millennium or the financial crisis (Ball 2009; Jany 2011; Li et al. 2008). In particular, the trust of shareholders in the independence of the external auditor and the integrity of the company's board was under discussion (Balsam et al. 2003; Krishnamurthy et al. 2006; Landsman et al. 2009). In addition to these monitoring mechanisms and other corporate governance instruments, shareholder participation has become a subject of research and political discussion in the last decade (Gal-Or et al. 2018). Recently, the EU (2017) called for a strengthening and improvement of the shareholder involvement. This

[2] In the literature, the terms "accounting quality", "credibility of financial statements", "earnings quality", and "external financial reporting quality" are often used interchangeably. They refer to the quality of the audited accounting earnings and financial statements. The earnings number is of vital importance in the financial statements, and most of the literature focuses primarily on the information properties of earnings (Nichols and Wahlen 2004). As the empirical measures used in this dissertation concentrate mainly on earnings, the term "earnings quality" is used throughout this thesis.

involvement takes place by shareholder votes at the annual general meeting of the company. Since the voting results also allow a look into the shareholders' world of thoughts, they have increasingly become an object of research in the accounting, auditing, and finance literature (Cai et al. 2009; Mayhew 2017).

In this context, the present dissertation intends to contribute to a deeper understanding regarding earnings quality from the perspective of shareholders of capital market-oriented companies. In particular, the thesis deals with indicators of shareholders' perceptions of earnings quality, the influence of the auditor's independence on this perceptions, and the shareholders' assessment of the importance of earnings quality in general. Therefore, this dissertation examines market reactions to earnings announcements, measures of earnings quality and the auditor's independence, as well as shareholders' voting behavior at annual general meetings. Before the research question, research design, findings, and implications of the related studies in the central part of this work are briefly summarized, a description of the chapters providing corresponding theoretical economic background should be given.

Chapter 2 first discusses the objective of accounting in the context of the agency theory. Subsequently, the resulting information function of accounting is elaborated, and it is dealt with the question of what is understood by high earnings quality. Moreover, the link between accounting and the capital market is presented. In particular, the importance of accounting and earnings quality for functioning capital markets is demonstrated. Finally, the role of the auditor is highlighted, and the interpretation of the auditor's independence in the agency context is discussed. Besides, it is outlined how high audit quality and auditor independence can be defined.

Chapter 3 addresses the meaning of shareholder voting at annual general meetings in the agency theory and describes the regulations regarding shareholder rights. In particular, the difference between annual general meetings in Germany and the U.S. are emphasized since both settings are subject to examination in one of the following three chapters in each case.

The empirical study presented in chapter 4 investigates auditor ratification votes in a U.S. setting. Although auditor ratification by shareholders is usually a routine, non-binding action in the U.S. and the ratification rates are in the 95% region or higher, the SEC (2009) emphasized the importance of auditor ratification by amending the disclosure requirements for the voting results. Thus, the question of whether the results of auditor ratification votes are informative regarding sharehold-

ers' perceptions of earnings quality arises. The study addresses this question using a returns-earnings design and demonstrates that the results of auditor ratification votes are associated with market reactions to unexpected earnings at the earnings announcement date. Furthermore, there are indications that this association seems to be positively related to higher levels of information asymmetry between managers and shareholders. Additional analyses reveal that the results of auditor ratification votes provide incremental information beyond that of other publicly available audit-related information. Thus, there is empirical support for the notion that the results of auditor ratification votes are earnings-related information that might help shareholders to make informed investment decisions. In light of these results, it appears reasonable to disclose the results of auditor ratification votes and to discuss a mandatory shareholder vote on auditor ratification.

Chapter 5 deals with the relation of the economic importance of the client and perceived earnings quality. In particular, it is examined whether and when shareholders have a negative perception of an auditor's economic dependence on the client. The results from a Big 4 client sample in the U.S. (fiscal years 2010 through 2014) indicate a negative association between the economic importance of the client—measured at the audit office-level—and shareholders' perceptions of earnings quality—measured by the earnings response coefficient (ERC) and ex ante cost of equity capital. The results are interpreted to mean that shareholders are still concerned about auditor independence even ten years after the implementation of the Sarbanes-Oxley Act (SOX). Furthermore, the association between the economic importance of the client and shareholders' perceptions of earnings quality applies predominantly to the subsample of clients that are more likely to be financially distressed. Thus, there is evidence that shareholders primarily care about earnings quality of economic important clients that are in a financially difficult situation. Therefore, the empirical results reveal that shareholders' perceptions of auditor independence are conditional on the client's circumstances. The suggestive findings provide initial insights and could motivate future research to examine other circumstances, especially because little attention has been devoted to this issue in the context of shareholders' perceptions of earnings quality.

The study presented in chapter 6 aims to contribute to a systematic understanding of shareholders' view on the importance of earnings quality. By examining votes on the discharge of the management board and the supervisory board in Germany as a proxy for shareholders' satisfaction, the study responds to the call of Cai et al.

(2010) for international research on shareholder voting. The paper sheds light on the question of whether earnings quality influences shareholders' satisfaction with the members of the company's board. Using data from 1,237 annual general meetings of German listed companies from 2010 through 2015, the study provides evidence that earnings quality—measured by the absolute value of discretionary accruals—is related to shareholders' satisfaction with the board. The study considers the advantageous German setting, which offers voting results from the mandatory discharge of the management board and the supervisory board. By taking the opportunity to differentiate between shareholders' satisfaction with the two parts of the company's board, the study provides a more in-depth understanding of shareholders' opinions. The fact that the findings regarding the discharge of the supervisory board are less substantial in magnitude and significance than those for the management board implies that shareholders predominantly blame the management board for inferior earnings quality. Additional analyses indicate that the company's information environment, company's performance, and the presence of an audit committee have an attenuating moderating effect on the caused shareholders' dissatisfaction due to poor earnings quality. Overall, the evidence that earnings quality positively influences shareholders' satisfaction emphasizes the relevance of earnings quality. Together with the other two studies of this doctoral thesis, this conclusion underlines the importance of accounting and auditing research on shareholders' perceptions of earnings quality.

2 Accounting, Earnings Quality, the Capital Market, and the Auditor

The focus of this dissertation is on the quality of accounting—i.e., earnings quality—and the related perceptions of shareholders. Therefore, it is expedient to discuss what is meant by high earnings quality. In order to define earnings quality, it is essential to first deal with the purpose of accounting. The link between accounting and capital market participants can then be established. Building upon this, factors that could influence shareholders' perceptions of earnings quality, such as the auditor, can be taken into account. Thus, this chapter aims to explore these aspects by discussing theoretical background knowledge.

In the next section, the agency theory is explained. Subsequently, accounting as an approach to solving or at least mitigating the agency problem is examined. Furthermore, the resulting information function of accounting, which is regarded as the main objective of accounting worldwide, is addressed. Finally, the section describes what is understood by high earnings quality in the context of the information function. The relationship between accounting and the capital market is examined in section 2.2.[3] In particular, the ERC, which is of considerable importance in this work, is presented. On the one hand, the ERC establishes a direct theoretical link between accounting and the capital market, and on the other hand, the ERC serves as a measure of perceived earnings quality, which is used in chapter 4 and chapter 5. Since this dissertation also deals with the role of the auditor and auditor independence, section 2.3 describes how the auditor can be integrated into the agency model. In addition, it is explained what is meant by high audit quality and auditor independence.

[3] In this thesis, the term "capital market" is to be considered as equity market and not debt market.

2.1 Agency Theory and the Objective of Accounting

To justify accounting, agency theory is often used in the literature. Therefore, this chapter briefly describes the agency problem and presents accounting as a possible way to alleviate this problem. The agency theory is based on the circumstances and the structure of a modern company. The separation of ownership and control is a basic characteristic of a contemporary public company (Berle and Means 1932; Fama 1980; Fama and Jensen 1983; Fos et al. 2018; Jensen and Meckling 1976; Smith 1776). This development can be explained by the continuous enlargement of the companies and is vital for economic progress (Berle and Means 1932; Fama 1980). In this way, individual savers invest their capital in business ventures which they do not operate themselves (Healy and Palepu 2001). They try to benefit from the specialization of the management employed to lead the company (Fama and Jensen 1983). In this way, an optimal capital allocation is crucial for economic development and welfare increase.

The agency theory can illustrate the challenges of achieving allocation efficiency and is based on a contractual relationship between the principal and the agent (Jensen and Meckling 1976). The principal—typically the owner(s) of the company—delegates work to the agent—the manager(s) of the company—and at the same time ensures compensation for the agent's effort. As already mentioned above, the principal tries to benefit from the agent's capabilities. However, this goes hand in hand with an agent's information advantage over the principal.[4] Information asymmetries thus characterize the contractual relationship. Since both the principal and the agent are utility maximizers, the fact that there are divergences of interest between the two parties of the relationship besides the information asymmetries leads to an agency problem (Jensen and Meckling 1976). Accordingly, the contractual relationship is subject to agency conflicts which both contracting parties would like to avoid. On the one hand, the principal engages in monitoring to prevent the agent from opportunistically exploiting the information advantage. On the other hand, the agent attempts to credibly assure to act in the principal's interest. Although both actions cause costs—monitoring and bonding costs—according to Jensen and Meckling (1976, 308), "there will be some divergence between the agent's decisions and those decisions which would maximize the welfare of the prin-

[4] This concerns information on the agent's characteristics, alternatives, and strategies with the associated consequences, namely: hidden characteristics, hidden action, and hidden intention (Breton 1995).

cipal." The latter results in a residual loss and sums up with the expenditures for monitoring and bonding to the agency costs.

Transferred to the contemporary economic world, following Fama (1980, 289), "the firm is viewed as a set of contracts among factors of production, with each factor motivated by its self-interest." The separation of ownership and control in a company, therefore, creates an agency problem due to asymmetric information and conflicting interests between owners and managers. It is in the sense of the contracting parties to minimize incurring agency costs (Christie and Zimmerman 1994; Jensen and Meckling 1976). The better informed manager can contribute to this common goal by providing information to the owner (Ng 1978; Sunder 1997; Sunder 2002). This provision of information to mitigate agency costs can be made through accounting on the basis of financial statements. The accounting information is intended to reduce information asymmetries and assist the owners in making their investment decisions but also in evaluating the manager. Thus, Healy and Palepu (2001, 410) state that the manager's reporting on the use of the allocated capital "enables investors to monitor compliance with contractual agreements and to evaluate whether entrepreneurs have managed the firm's resources in the interests of external owners." Since financial statements are the primary source of information for the owners, the manager's compensation is based on the accounting earnings (Ng 1978; Ng and Stoeckenius 1979; Watts and Zimmerman 1979). The objective of this remuneration system is that managers act in the interests of the owners (Watts and Zimmerman 1978), which is the reason why accounting information also fulfills a stewardship function (Gjesdal 1981).

Thus, accounting plays an eminent role in drafting contracts by providing proper information (Christie and Zimmerman 1994; Sunder 2002; Watts and Zimmerman 1986). Accordingly, the purpose and therefore the basis for justifying accounting is to mitigate agency costs (Healy and Palepu 2001; Jensen and Meckling 1976; Watts 1977; Watts and Zimmerman 1986; Watts and Zimmerman 1990). Thereby, the focus is on the provision of information that is useful for decision-making. This may concern primarily decisions of the owners but also decisions of any other possible parties, which are potentially part of a contractual relationship with the company. The information function is formulated as the objective of accounting. For example, in the Conceptual Framework for Financial Reporting of the Financial Accounting Standards Board (FASB), the FASB (2010, OB2) expresses itself as follows: "The objective of general purpose financial reporting is to provide financial information

about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity." The wording of the International Accounting Standards Board (IASB), which can be found in Framework F.12 of the International Financial Reporting Standards (IFRS), goes in the same direction: "The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions."

The accounting information should, therefore, facilitate sound economic decisions for its addressees and also contribute to an enhancement of overall welfare through efficient capital allocation. For this to succeed and for the information function to be fulfilled, the accounting information must be of high quality (Messier et al. 2016). This argument can be illustrated by looking at the agency model. It is the manager who provides information to the owners. As the manager's compensation is tied to reported earnings, the manager has an incentive to manipulate the accounting earnings in order to receive a higher remuneration (Christie and Zimmerman 1994; He and Yang 2014). Empirical research has indeed identified such opportunistic behavior by managers (e.g., Healy 1985). As a result, it must be ensured that the information provided to the owner is credible to mitigate information asymmetries and enable effective monitoring. Watts and Zimmerman (1990, 135) conclude that "contracts that use accounting numbers are not effective in aligning managers' and contracting parties' interests if managers have complete discretion over the reported accounting numbers." Thus, the objective of accounting to mitigate agency costs can be achieved only if the accounting information provided by the manager is of high quality.

The question arises what is meant by high earnings quality. Unfortunately, there is no generally accepted definition of earnings quality in the accounting literature (Cohen et al. 2004; Gaynor et al. 2016). The legislators postulate a fair presentation and focus on the decision-usefulness of earnings. Essentially, the criteria relevance and reliability—or faithful representation, respectively—can be derived as qualitative characteristics of decision-useful information (FASB 1978; FASB 2010).[5] Correspondingly, Dechow et al. (2010, 344) define earnings quality in their literature review as follows: "Higher quality earnings provide more information about

[5] In addition to these two fundamental characteristics, there are other requirements, such as materiality, comparability, verifiability, timeliness, and understandability (FASB 2010).

the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker." Gaynor et al. (2016, 2) refer more directly to the reliability of earnings and suggest that high quality financial reports "are more complete, neutral, and free from error and provide more useful predictive or confirmatory information about the company's underlying economic position and performance."

Similarly, there is no consensus on a comprehensive measure of earnings quality (Knechel et al. 2013). The empirical research considers various measures of different dimensions of earnings quality which can, according to Dechow et al. (2010), be classified into the following categories: earnings properties, external earnings misstatement indicators, and shareholders' responsiveness to earnings.[6] The latter represents a measure of shareholders' perceptions of earnings quality and is discussed in more detail in the following section. Specifically, section 2.2 deals with the role of accounting in the capital market as shareholders at the capital market are regarded as the major addressees of accounting information and are responsible for efficient resource allocation (Khurana and Raman 2006; Lev and Ohlson 1982).

[6] For additional information regarding different measures of earnings quality, please refer to Dechow et al. (2010) or Perotti and Wagenhofer (2014).

2.2 Accounting and the Capital Market

In the previous section, the need for financial reporting was motivated by the agency theory, and the information function of accounting was elaborated. As described in section 2.1, the FASB and the IASB have an interest in ensuring that accounting provides all information that is useful for the decisions of any users of financial statements. However, the primary addressees of the provided information are the shareholders who are intended to make their investment decisions in the best possible way (Khurana and Raman 2006; Lev and Ohlson 1982). Moreover, it is assumed that the information demands of the shareholders mainly include those of the other addressees (IFRS Framework F.10). Accordingly, the provision of information to shareholders that is useful for decision-making should also satisfy the other users of financial statements.

For this reason, this section deals specifically with the equity capital market and establishes a link between accounting and the capital market. The capital market is responsible for an efficient allocation of resources and is therefore expected to contribute to a functioning economy. Alternatively, expressed in the words of Fama (1970, 383): "The primary role of the capital market is allocation of ownership of the economy's capital stock." However, this requires an economic functioning of the capital market in terms of information efficiency. Information efficiency is the ability of the capital market to process information and incorporate it into stock prices (Fama 1970; Wagenhofer and Ewert 2015). The semi-strong form of information efficiency—assumed in large parts of capital market research—implies that shareholders take all publicly available information into account when making their investment decisions (Fama 1970; Fama 1998). The major source of publicly available information represents the accounting of companies (Basu et al. 2013; Ng 1978; Ng and Stoeckenius 1979). In this way, the functioning of the capital market depends on the availability of high quality accounting information (Healy and Palepu 2001; Levitt 1998). This is operationalized by the provision of decision-useful information in the sense of the information function of financial reporting which is the link between accounting and the capital market.

Besides, it was mentioned in section 2.1 that the purpose of accounting can be achieved only if the information provided is of high quality. High earnings quality implies that the information provided is relevant and reliable in representing the financial performance of the company. Since shareholders need useful information

to make their investment decisions, they are more willing to invest in companies that deliver high earnings quality (Levitt 1998). As a logical consequence, it is not only the actual earnings quality that is important, but especially shareholders' perceptions on this topic. After all, shareholders must be able to trust the financial statement information. Whether shareholders consider this information relevant and reliable is a central issue in market-based accounting research. Indeed, the findings of empirical studies—that the capital market includes accounting information in its decision-making and formation of stock prices—support this notion (Collins and Kothari 1989; Kothari 2001; Watts and Zimmerman 1986). The field of positive accounting literature is based on the seminal publications of Ball and Brown (1968) and Beaver (1968) that heralded methods from empirical finance into accounting research. Further studies have taken up the connection between accounting and capital market and developed theoretical models with the aim of empirically testing them. In doing so, the stock price is formulated as a function of financial statement data and, hence, a relation between accounting information and market valuation is established (Watts and Zimmerman 1990). In particular, future cash flow expectations are formed from the disclosed earnings information.

To measure how earnings map into stock prices, the literature uses the ERC determined on the basis of an event study. The earnings announcement represents the event, and the change of the stock price is the variable to be explained. The logic behind is that the disclosure of decision-useful information should revise the market's previous expectations and result in a stock price reaction (Kothari 2001). Accordingly, the ERC offers a conceptual specification of the link between accounting and the capital market, which has been one of the most popular fields of research in accounting to this day (Dumontier and Raffournier 2002; Kothari 2001). At the same time, the ERC also provides a measure of shareholders' perceptions of earnings quality (Dechow et al. 2010). Thus, seminal ERC studies (Holthausen and Verrecchia 1988; Kormendi and Lipe 1987; Lev 1989) reveal that the extent of the price reaction due to a single earnings announcement depends, inter alia, on the quality of the earnings signal. Therefore, the ERC metric is of great importance not only for market-based accounting research in general, but in particular for the studies in chapter 4 and chapter 5 of this dissertation. For this reason, special attention is paid to the ERC model at this point, and it is explained in more detail. Consequently,

a closer look is taken at the theoretical model developed by Lev (1989), which considers the revision of a firm's market price due to a single earnings announcement.[7]

As shown in Equation 2.1, the price of a firm at date 0, P_0, equals the present value of the unknown random normally distributed future cash flows to the firm's risk-neutral shareholders, $\mathrm{E}(\widetilde{CF})$.

$$\begin{aligned} P_0 &= \mathrm{E}(\widetilde{CF}) \\ \widetilde{CF} &\sim \mathcal{N}(\mathrm{E}(\widetilde{CF}), \sigma^2) \end{aligned} \tag{2.1}$$

At date 1, the firm releases an earnings signal, e_1, before any cash flow to the firm's shareholders is observable. As a result of this signal, shareholders can revalue the firm because the expected future cash flows are linked to the firm's earnings. The earnings signal corresponds to a scale factor, a, multiplied by the present value of random future cash flows, $\widetilde{CF}$, plus a random noise term, $\tilde{\epsilon}$, which is independent of these cash flows. Furthermore, the noise is normally distributed with mean zero and variance σ_ϵ^2.

$$\begin{aligned} \tilde{e} &= a\widetilde{CF} + \tilde{\epsilon} \\ \tilde{\epsilon} &\sim \mathcal{N}(0, \sigma_\epsilon^2) \\ \mathrm{Cov}(\widetilde{CF}, \tilde{\epsilon}) &= 0 \end{aligned} \tag{2.2}$$

As it is assumed that the shareholders use Bayes' rule to update their expectations regarding the present value of the unknown random future cash flows, the price of the firm after the announcement of the signal is represented by Equation 2.3.

$$P_1 = \mathrm{E}(\widetilde{CF} |\, e_1) = \frac{\frac{e_1/a}{\sigma_\epsilon^2} + \frac{\mathrm{E}(\widetilde{CF})}{a^2\sigma^2}}{\frac{1}{\sigma_\epsilon^2} + \frac{1}{a^2\sigma^2}} \tag{2.3}$$

Considering Equation 2.2, it follows that $\mathrm{E}(\tilde{e}) = a\mathrm{E}(\widetilde{CF})$. For further simplification, the scale factor, a, is set to 1.

$$P_1 - P_0 = \frac{\sigma^2}{\sigma^2 + \sigma_\epsilon^2} \left(e_1 - \mathrm{E}(\tilde{e_1})\right) \tag{2.4}$$

[7] The following description of the theoretical model is based on a previous version of the study presented in chapter 4.

Equation 2.4 highlights that the change in the stock price is determined by the earnings signal, e_1, and its expectation, $\mathrm{E}(\tilde{e_1})$. In addition, the change in the stock price also depends on variances in the value of the firm and the earnings noise, i.e., the ERC, $\sigma^2/(\sigma^2 + \sigma_\epsilon^2)$.

$$\begin{aligned} \frac{\partial ERC}{\partial \sigma^2} &> 0 \\ \frac{\partial ERC}{\partial \sigma_\epsilon^2} &< 0 \end{aligned} \tag{2.5}$$

The variance, σ^2 (σ_ϵ^2), has a positive (negative) influence on the ERC (Equation 2.5). Thereby, the earnings information is of higher relevance, if the variance of future cash flows is greater. Notably, shareholders' perceptions of earnings quality are also represented by the variance of the earnings noise, σ_ϵ^2. In this context, higher quality means higher reliability and, hence, a lower variance; it results, ceteris paribus, in a higher ERC and, therefore, a greater price reaction. In the end, following Barth et al. (2001, 80), the earnings information can only influence the stock price if it is "relevant to investors in valuing the firm and is measured reliably enough."

Accordingly, the presented theoretical model suggests a direct influence of accounting information on the capital market. Moreover, it reveals that shareholders' perceptions of earnings quality determine the extent to which unexpected earnings are priced in (Holthausen and Verrecchia 1988; Kormendi and Lipe 1987; Lev 1989). Therefore, the ERC model is a basis for empirical studies and at the same time provides a measure of shareholders' perceptions of earnings quality. How the earnings quality and shareholders' related perceptions can be influenced by the auditor and how this may result in a need for independent auditing is described in the next section.

2.3 The Role of the Auditor and Auditor Independence

The demand for auditing—like the need for accounting—can be derived from the agency theory (DeFond and Zhang 2014). Therefore, the role of the auditor in the agency model will be discussed in more detail below. Fundamentally, the relationship between the principal and the agent is characterized by information asymmetries and conflicts of interest. The agent can contribute to alleviating the arising agency costs by providing information to the principal through accounting. The information is intended to mitigate the information advantage of the agent and to facilitate the principal to monitor the agent effectively (Healy and Palepu 2001). However, since the agent has discretion regarding the provided information, there exists the chance for opportunistic manipulation at the expense of the principal (Christie and Zimmerman 1994). But, helping to solve the agency problem by minimizing agency costs can be successful only if the accounting information is of high quality and is considered credible by the principal. However, it should not be easy for the agent to convince the principal of the reliability of the information provided. Therefore, the assignment of an independent third party can help to monitor the agent and to ensure a minimum level of reliability of the accounting information, and thus, effectively reduce the agency costs (Cohen et al. 2004; Jensen and Meckling 1976; Ng and Stoeckenius 1979).

The independent auditor is an acknowledged monitoring instrument that assures earnings quality.[8] Accordingly, the need for auditing arises because of the existence of information asymmetries and conflicts of interest between the principal and the agent (DeAngelo 1981b; Healy and Palepu 2001; Watts and Zimmerman 1986). This can also be transferred to the contemporary economic world: the demand for auditing results from the need of independent assurance of earnings quality on the part of the users of accounting information (Cahan et al. 2009; Healy and Palepu 2001; Watts and Zimmerman 1983). Therefore, the objective of auditing is to ensure a sufficient earnings quality, and thus, mitigate the agency problem (DeFond and Zhang 2014; Watts and Zimmerman 1983).

Because of the important role of auditing in the agency context, a voluntary audit is beneficial for all parties, at least in companies with separation of ownership and control (Messier et al. 2016; Watts 1977; Watts and Zimmerman 1979). Indeed, Watts and Zimmerman (1983) discovered that auditing has already taken place in

[8] For further mechanisms and information intermediaries to reduce agency costs, please refer to Healy and Palepu (2001) or Jensen and Meckling (1976).

early business enterprises around the year 1200 and was performed by shareholders and directors. In 1844, auditing was required by law for the first time by the British Companies Act (Watts and Zimmerman 1983). In contrast, independent professional auditors in their present form had not emerged until the end of the 19th century (Watts and Zimmerman 1983). The fact that the appointment of a professional auditor was common practice—despite the lack of regulations in this regard—indicates the critical importance of auditing for the economic success and the continued existence of a company. Transferred to the capital market, proper auditing can strengthen public confidence in the accounting information, and thus, contribute to the functioning of the markets (EU 2014; FASB 1978). To fulfill its purpose, the audit must be—like accounting information—of high quality and it must also be perceived as being of high quality. Therefore, the question inevitably arises what is meant by high (perceived) audit quality.[9]

Knechel et al. (2013) notes that despite decades of research efforts, unfortunately, no consensus has been reached on what characterizes audit quality. Nevertheless, relevant present studies define audit quality as follows: DeFond and Zhang (2014, 281) describe higher audit quality as "greater assurance that the financial statements faithfully reflect the firm's underlying economics, conditioned on its financial reporting system and innate characteristics." Gaynor et al. (2016, 5) define "a higher quality audit as one that provides a higher level of assurance that the auditor obtained sufficient appropriate evidence that the financial statements faithfully represent the firm's underlying economics." Both definitions point in the same direction and directly address the objective of auditing—i.e., the assurance of the accounting information. Even if these definitions are very focused on the objective of auditing, the widespread notion of DeAngelo (1981b, 186), which refers to the attributes of the auditor, is also valuable in understanding audit quality: "The quality of audit services is defined to be the market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach."

This definition categorizes the quality of the audit into two essential components: (1) the ability and effort of the auditor to identify misstatements and (2) the willingness to express an objective opinion and disclose detected errors (Knechel et al. 2013). Thus, audit quality might be compromised—even though

[9] For detailed discussions on the definition of audit quality, please refer to DeFond and Zhang (2014), Francis (2011), and Knechel et al. (2013).

the auditor has the necessary capabilities—if the auditor does not act in the interests of the shareholders, but the interests of the manager. Therefore, the audit is effective in mitigating agency costs only if the auditor's independence is maintained (Watts and Zimmerman 1983). However, to successfully assure earnings quality, the auditor does not only need to be independent in fact but, in particular, independent in appearance (Shockley 1981). The fact that shareholders' perceptions of auditor independence are essential in this context, as they must rely on financial statement information, is also evident from the reference to the "market-assessed probability" of DeAngelo (1981b, 186).

Nonetheless, theory and practice reveal that auditor independence is not given without any doubt. On the one hand, the agency theory including conflicts of interest is not limited to managers and shareholders. The incentives of the auditor cannot be ignored in this context (Gjesdal 1981). Accordingly, Antle (1982) includes the auditor as an additional benefit-maximizing agent in the agency model. Thus, this three-party relationship can be regarded as a strategic game in which the auditor does not wish to lose the profits from future audit fee streams (DeAngelo 1981a; Sunder 2002). Because of the large influence of the management on the auditor appointment, there might be skepticism among shareholders regarding the auditor's independence (Mayhew 2017; Watts and Zimmerman 1981). On the other hand, in practice, accounting scandals like Enron and the collapse of Arthur Anderson have cast serious doubts on auditors' independence (Fearnley et al. 2005; Krishnamurthy et al. 2006; Landsman et al. 2009).

There are also incentives for the auditor to maintain independence. In model theory, expected profits from the fees of the other clients serve as collateral (DeAngelo 1981b). In addition to this phenomenon known as reputation rational, the litigation rational—which states that auditors try to avoid litigation exposure—enhances auditor independence (Dye 1993). In line with this reasoning, empirical studies show that shareholders' perceptions of earnings quality are influenced by attributes of auditor independence—e.g., auditor size as a proxy for the reputation collateral and auditor wealth or high non-audit fees as a sign of jeopardized independence—and further auditor characteristics—e.g., industry specialization (Balsam et al. 2003; Francis and Ke 2006; Higgs and Skantz 2006; Khurana and Raman 2004; Krishnan and Ye 2005; Krishnan et al. 2013; Teoh and Wong 1993).

To sum up, theory and empirical evidence imply that independent auditors play an essential role in mitigating agency problems. As shareholders seem to consider

independent auditors enhancing earnings quality, they play a vital role in the functioning of capital markets. This was also recognized by the regulators, which is the reason why the role of the auditor and auditor independence were strengthened as a response to the accounting scandals and the financial crisis (e.g., SOX; Dodd-Frank Act; EU 2014). Besides, the legislator also aims at facilitating and strengthening shareholder participation by extending voting rights (e.g., Dodd-Frank Act; EU 2007; EU 2017). Thus, the next chapter deals with shareholder voting at annual general meetings.

3 Shareholder Voting at the Annual General Meeting

As discussed in chapter 2, a modern company is characterized by the separation of ownership and control (Berle and Means 1932). The arising asymmetric information and conflicts of interest between managers and shareholders result in agency costs. Accounting by the manager and the assurance of high earnings quality by an independent auditor are supposed to mitigate this agency problem. The provided information is intended to reduce information asymmetries and enable the shareholders to monitor the manager effectively. Accordingly, shareholder control of the manager's incentive structure and performance is a fundamental element of the agency theory. Only effective monitoring ensures that the manager acts in the best interests of the shareholders. Therefore, the corporate law should provide shareholders with sufficient monitoring rights to overcome the problems associated with the separation of ownership and control (Black 1992). In line with this perspective, Bebchuk (2005, 836) argues that "increasing shareholder power to intervene [...] would improve corporate governance and enhance shareholder value by addressing important agency problems that have long afflicted publicly traded companies."

The legal operationalization of shareholder control is based on the voting rights on critical corporate decisions, such as amendments of bylaws, structural changes, or the election and removal of board members (Thomas and Tricker 2017). In the literature, the voting right—especially the right to elect board members—besides the right to sell shares is considered as the most fundamental right of shareholders (Shleifer and Vishny 1997; Velasco 2006). The shareholder monitoring by voting rights typically takes place at the annual general meeting of the company (Mason et al. 2018; Thomas and Tricker 2017; Van der Elst 2011). In addition, the annual general meeting serves as a forum for questions and discussions by which the management is required to account to its shareholders (§ 131 (1) AktG). Thus, in the theoretical agency context, the annual general meeting represents a major monitoring instrument to mitigate costs resulting from information asymmetries and conflicting interests between managers and shareholders (Lafarre 2017). In this respect, it appears logical that the legislators endeavor to strengthen the role of the annual general meeting. In the last decade, the importance of the annual general

meeting, both in the EU and in the U.S., has been highlighted by extending voting rights or by facilitating shareholder participation (e.g., Dodd-Frank Act; EU 2007; EU 2017).

Nevertheless, the theoretical importance of the annual general meeting does not appear to coincide with its practical relevance (Lafarre 2017; Palmiter 2015). In particular, not all shareholders exercise their control rights and participate in the annual general meeting. As thorough decision-making and voting at the annual general meeting can be cost-intensive for an individual shareholder, the benefits of participation might not cover the expenses. At the same time, an individual shareholder could rely on the remaining shareholders and abstain from monitoring the management, which would result in a free rider problem (Thomas and Tricker 2017; Van der Elst 2011). Consequently, shareholders have some incentives not to vote and are rational apathetic despite the theoretical meaning of shareholder monitoring (Lafarre 2017). This applies in particular to small shareholders who have neither strong enough incentives nor sufficient voting power to influence corporate decision-making (Leech 2013; Sainty et al. 2002; Shleifer and Vishny 1997). Therefore, it might be more feasible for a small shareholder to follow the "wall street rule" and sell the shares (Gillan and Starks 2007).[10] For this reason, legislators aim at facilitating shareholder participation and allow shareholders to authorize proxies to vote their shares in absence from the annual general meeting. Beyond this, in advance of the meeting, the management has to provide adequate information for shareholders to vote their shares.

In contrast to small shareholders, institutional shareholders have greater incentives to monitor management and to participate in corporate decision-making (Krishnan et al. 2013; Leech 2013; Palmiter 2015; Sainty et al. 2002; Shleifer and Vishny 1997; Velasco 2006). Therefore, institutional shareholders engage proxy advisors—e.g., Institutional Shareholder Services (ISS) or Glass Lewis—to consult them how to vote their shares (Cunningham 2017; Langenbucher 2018; Palmiter 2015).[11] Consistently, empirical studies demonstrate that voting recommendations of proxy advisors have a considerable impact on the outcome of shareholder voting in the U.S. as well as in the EU (Alexander et al. 2010; Cai et al.

[10] However, other authors represent a contrary opinion (Admati and Pfleiderer 2009; Dao et al. 2008; Del Guercio et al. 2008; Parrino et al. 2003), and at least for large shareholders it should be less expensive to vote their shares then selling them.

[11] In Germany, there additionally exist shareholder protection associations—e.g., Deutsche Schutzvereinigung für Wertpapierbesitz (DSW) or Schutzgemeinschaft der Kapitalanleger (SDK)—that represent the interests of minority shareholders at annual general meetings.

2009; Choi et al. 2010; Cunningham 2017; Hitz and Lehmann 2017). The increasing influence of institutional shareholders, who control about 70% of the stock of the largest public companies in the U.S. (Palmiter 2015), suggests that the annual general meeting might represent an effective monitoring mechanism. This opinion is supported by the fact that the average voter turnout in the U.S. totals approximately 80% (Van der Elst 2011). In Germany, however, the average voter turnouts over the recent years from 2010 onwards are between 50% and 60% and for small shareholders at least over 40% (Lafarre 2017; Langenbucher 2018; Mendoza et al. 2010). Even if the voter turnouts do not fully justify the theoretical meaning of shareholder monitoring, they are still considerable. The reason for that is the previously mentioned regulatory encouragement of voter participation through simplifications of the voting procedure. Nevertheless, the voting results are generally very high, and majorities below 90% or even 95% are already regarded as outliers (Cai et al. 2009; Cunningham 2017; Lafarre 2017; Mendoza et al. 2010).

Although the latter insight may not be a strong argument for the importance and effectiveness of shareholder monitoring, empirical studies reveal that shareholder voting can induce real economic consequences. For example, recent studies show that even minor changes in the voting results are related to corporate changes, such as the turnover of board members or auditors (Aggarwal et al. 2017; Barua et al. 2017; Cai et al. 2009; Cuñat et al. 2016; Del Guercio et al. 2008; Tanyi and Roland 2017). Therefore, it is not surprising that the literature using the voting behavior of shareholders to investigate their perceptions is growing rapidly. In particular, more and more studies are focusing on the question of which factors influence shareholders' satisfaction and thus the voting results (e.g., Cai et al. 2009; Sainty et al. 2002; Ye et al. 2013). All in all, the literature supports the conclusion of Cai et al. (2009, 2417) "that at least some shareholders care about performance and governance, and their opinions are reflected in the way they vote." In chapter 4 and chapter 6, this thesis also makes use of voting outcomes to measure shareholders' satisfaction. In this way, the two studies deal with voting results from annual general meetings in the U.S. and Germany, respectively. Consequently, the remainder of this chapter

compares the shareholder voting rights, voting procedure, and the legal structure of the annual general meeting in the U.S. and Germany.[12]

In both Germany and the U.S., shareholder voting rights are exercised at the annual general meeting (§ 118 (1) AktG; Del. GCL § 211(b); MBCA § 7.01). Special meetings take place only in exceptional cases, and therefore, will not be discussed further at this point. In Germany, the annual general meeting has to be held within the first eight months after the end of the fiscal year and has to be announced at least 30 days before the day of the meeting (§§ 123 (1) and 175 (1) AktG). Similarly, according to MBCA § 7.03, the annual general meeting has to take place within six months after the fiscal year-end or 15 months after the last annual general meeting.[13] In addition to the location and time of the meeting, information on the individual agenda items has to be provided (§ 121 (3) AktG). Furthermore, additional information rights have to be fulfilled within the context of the annual general meeting, which are intended to support shareholders in exercising their voting rights. In particular, the audited financial statements—which are used by shareholders to monitor and to vote (Leuz 2010)—have to be provided to the shareholders (§§ 175 (2) and 176 (1) AktG). However, in the U.S., the latter is prescribed only by MBCA § 16.20 but not by Del. GCL. Attendance at the annual general meeting enables the shareholders to gather information, ask questions, and finally, to vote on resolutions regarding important corporate decisions that will be discussed in more detail later.

Shareholders who own shares with voting rights on the record date are entitled to vote on the resolutions at the annual general meeting. In Germany, the record date is set three weeks before the meeting (§ 123 (4) AktG). In the U.S., it can be set by the board within a specified period depending on the specific state law.[14] In general, in Germany as well as in the U.S., all shareholders have the right to vote, and the principle of one-vote-per-share exists (§ 12 (1) AktG; Del. GCL § 212(a);

[12] In Germany, shareholder rights are defined in the Stock Corporation Act (AktG). In the U.S., voting rights are governed by state law, whereby the vast majority of companies follow the Model Business Corporation Act (MBCA) or the Delaware General Corporation Law (Del. CGL). However, there are also federal regulations and SEC rules. Though, the regulations are largely consistent with each other and differ only in some details, which will be dealt with in the following paragraphs.

[13] According to Del. GCL § 211(c), the annual general meeting has to be held within 30 days after the designated date or 13 months after the latest annual general meeting.

[14] According to MBCA § 7.07, the record date has to be not more than 70 days before the meeting; Del. GCL § 213(a) prescribes a record date within the period from 60 to 10 days before the meeting.

MBCA § 7.21). However, in addition to the common shares, there are also preference shares that can be issued without voting rights.[15] While the introduction of multiple voting rights per share is prohibited in Germany (§ 12 (2) AktG), deviations from the one-vote-per-share principle are more frequent in the U.S. (Dunlavy 2006). To facilitate the exercise of voting rights for shareholders and to ensure a high level of voter turnout, shareholders can vote their shares by mail or electronically before the annual general meeting in the U.S. and Germany. Furthermore, it is possible to delegate voting rights to proxies to enable a vote in absence of the annual general meeting (§ 134 (3) AktG; EU 2007; Thomas and Tricker 2017; Velasco 2006).

Before the various resolutions on the agenda of annual general meetings are presented, the structural differences in the board structure of German and U.S. companies must be dealt with. In the U.S., companies are governed by a one-tier board in which executive—i.e., management—directors as well as non-executive—i.e., independent—directors are present. On the contrary, German companies have to implement a two-tier board system by fully separating the roles of executive and non-executive board members in the management and supervisory board, respectively (§ 105 (1) AktG). The management board members, similar to the executive directors, are responsible for the day-to-day management of the company. The supervisory board members, which are comparable to the independent directors, are responsible for appointing and monitoring the management board (§§ 84 (1) and 111 (1) AktG). The formal structure, as well as the voting items on the agenda of the annual general meeting regarding the members of the board, differ between the U.S. and Germany.

In Germany, only the members of the supervisory board but not the management board are elected by the annual general meeting (§ 101 (1) AktG).[16] Thereby, the members of the supervisory board are elected on the basis of a simple majority for a maximum tenure of five years (§ 102 (1) AktG), with premature dismissal by the annual general meeting being possible with a three-quarter majority of the votes cast (§ 103 (1) AktG).[17] In the U.S., the annual general meeting has the

[15] In return, owners of preference shares have the right to receive a preferred and generally higher dividend as owners of common shares.

[16] Besides, it must be taken into account that employee representatives are also required to be represented on the supervisory boards of sufficiently large stock corporations following the German Co-Determination Act. However, the chairman of the supervisory board has to be a shareholder representative.

[17] According to § 103 (1) AktG, the company's bylaws can determine a different majority and other requirements.

right of election and removal of the board directors (Del. GCL § 211(b); MBCA § 8.08). Although generally, all members of the board have to face election every year, staggered boards are a widespread exception to the annual election (Del. GCL § 141(d); MBCA § 8.06). In staggered boards, which are implemented by about half of the largest U.S. companies (Palmiter 2015), board members are classified into different groups that are elected in a multi-year election cycle. Usually, the method of electing directors in the U.S. is straight plurality voting (Del. GCL § 216; MBCA § 7.28). This means that the candidates with the highest numbers of votes are elected to the board of directors. Thus, it is irrelevant whether they receive a majority of the votes cast. Correspondingly, in an uncontested election—which is the case for the overwhelming majority of annual general meetings in the U.S.—directors could be re-elected with a single vote (Thomas and Tricker 2017). In addition, in the straight voting method, a majority shareholder is able to appoint all directors. An alternative approach that can be used is cumulative voting that gives minority shareholders the opportunity to be represented on the board by bundling their votes on a limited number of candidates (Del. GCL § 214; MBCA § 7.28). In addition to the election of the supervisory board members, there is an additional vote in Germany where shareholders can express their satisfaction with the work of the board members. This vote is the discharge of the management board and the supervisory board, which has to take place each annual general meeting for both boards separately (§§ 119 (1) number 3 and 120 (1) AktG).[18] Since the discharge of the board members takes place every year with no exception, it is an interesting area for research, and therefore, used in the study presented in chapter 6 of this thesis.

In addition to voting concerning the board members, in which the shareholders can signal their confidence, further resolutions are on the agenda of the annual general meeting. These are not decisions about the day-to-day business, but important matters that are usually not on the agenda every year. These are in particular resolutions concerning changes to the company's bylaws or far-reaching structural changes, such as the procurement and reduction of capital, or even the dissolution of the company (§ 119 (1) AktG; Del. GCL § 109; MBCA § 10.20; Bebchuk 2005; Thomas and Tricker 2017). In addition to these rather exceptional cases, there are also a few votes that are regularly on the agenda of the annual general meeting. In

[18] By granting discharge, the annual general meeting approves the administration of the company by the members of the management board and the supervisory board. However, the discharge does not include a waiver of claims for reimbursement (§ 120 (2) AktG).

Germany, there is a mandatory resolution which decides on the appropriation of the distributable profits (§§ 119 (1) number 2 and 174 (1) AktG). Finally, two further agenda items are voted on at a broad number of annual general meetings that also attract considerable attention in accounting research. This concerns auditor election or ratification and say-on-pay votes that again legally differ between the U.S. and Germany. In Germany, for example, the appointment of auditors by the annual general meeting is mandatory and binding (§ 119 (1) number 4 AktG), whereas in the U.S. the auditor ratification is neither mandatory nor binding. However, it should be noted that over 90% of the largest companies in the U.S. voluntarily seek auditor ratification (Cunningham 2017). Say-on-pay, on the contrary, has been mandatory at least every three years in the U.S. since the Dodd-Frank Act in 2010 (Section 953(b) of the Dodd-Frank Act) but voluntary in Germany (§ 120 (4) AktG).[19] In both countries, however, say-on-pay has an advisory character. In addition to the mentioned votes, shareholders—which (jointly) hold a sufficient number of shares—can propose items on the agenda and may also nominate board members. This has been simplified in the U.S. in particular by the SEC's Shareholder Proposal Rule 14a-8 that allows these issues to be included in the proxy material.

Finally, it is worth mentioning that in both Germany and the U.S. all voting results and the number of votes cast of listed companies have to be disclosed. This requirement applies irrespective of whether the vote is mandatory or voluntary. In Germany, according to § 130 (6) AktG, the disclosure has to be made on the company's website within seven days after the annual general meeting. In the U.S., the SEC (2009) requires the results of any vote to be filed on Form 8-K within four days after the annual general meeting. This disclosure of the voting outcome enables the empirical investigation of shareholders' satisfaction with the aim to contribute to a deeper understanding of shareholders' perceptions regarding economic questions.

[19] However, in the recent directive regarding the encouragement of long-term shareholder engagement, the EU (2017) calls for a mandatory vote of the annual general meeting on the remuneration system of the management at least every four years.

4 Results of Auditor Ratification Votes and Shareholders' Perceptions of Earnings Quality[20]

"There is meaning to auditor ratification votes."

This quote is the conclusion of Mayhew (2017, 127) from the three papers of the Auditor Ratification Research Forum in the American Accounting Association Journal *Accounting Horizons*. The need for such a forum, which deals in particular with the consequences of auditor ratification votes, demonstrates the increasing relevance of shareholder participation at annual general meetings, not only in practice but also in auditing and accounting research. Most importantly, these votes might allow valuable insights into the understanding of shareholders' opinions.

In chapter 2, both the importance of high earnings quality and the auditor's assurance function to reduce information asymmetries and, hence, agency costs were discussed. Against the backdrop of these insights, it would be beneficial to have a comprehensive indicator of shareholders' confidence in the reliability of accounting information. This, in turn, could help an average shareholder to make informed and reasonable investment decisions. Shareholders' satisfaction with auditor selection expressed in the above-mentioned auditor ratification vote at annual general meetings (Cohen et al. 2004) could be an attempt to find such an indicator, especially given that independent auditors play an essential role in assuring sufficient earnings quality and contributing to mitigating the agency problem (Watts and Zimmerman 1983). Although auditor's responsibility is to shareholders and it is the audit committee's responsibility to hire the auditor, management plays a major role in the appointment of the auditor (Barua et al. 2017; Beck and Mauldin 2014; Cohen et al. 2010;

[20] This chapter is based on a working paper titled "Results of Auditor Ratification Votes and Shareholders' Perceptions of External Financial Reporting Quality", which is co-authored by Jacob Justus Leidner. The paper was presented at the *2015 DART Mini Graduate Workshop* in Graz, the *38th European Accounting Association Annual Congress* in Glasgow, the *77. Wissenschaftliche Jahrestagung des Verbandes der Hochschullehrer für Betriebswirtschaft* in Vienna, the *2015 American Accounting Association Annual Meeting* in Chicago, and the *8th European Auditing Research Network Symposium* in Lausanne. The reasoning, results, and interpretations of this study might change after the submission and publication of this doctoral thesis. The recent version of the paper is available upon request.

Dhaliwal et al. 2015). This poses a threat to auditor independence and ultimately to the quality of the audited financial statement (Mayhew 2017). Nevertheless, it is the task of shareholders to monitor the management as far as possible, and the auditor ratification vote at annual general meetings is one of the very few evident opportunities to monitor (Van der Elst 2011). Accordingly, it would be interesting to know whether the results of auditor ratification votes that express shareholders' satisfaction with the management-selected auditor allow inferences regarding shareholders' assessment of earnings quality.

However, the fact that the dissenting votes are far below a simple majority (Mayhew 2017), might indicate that shareholders do not fulfill their obligation and that the voting results constitute an indicator of perceived earnings quality. Additionally, a considerable fraction of shareholders is passive in director elections or auditor ratification votes (Dao et al. 2008). Finally, auditor ratification by shareholders in the U.S. is usually a voluntary, routine, and non-binding matter (Hermanson et al. 2009). An effect can, therefore, be achieved only by disclosing the voting results by signaling earnings-related information to the capital market. Indeed, the SEC (2009) requires the disclosure of auditor ratification votes and emphasized the importance of auditor ratification by amending the disclosure requirements for the voting results. This situation implies that the results of auditor ratification votes are important information. Notwithstanding, little is known about shareholders' interests in and perceptions of the auditor's election, approval, or ratification process (Wei et al. 2015). Although there are some studies on the determinants and consequences of auditor ratification votes that also point to a link between shareholders' perceptions of audit topics and their voting decisions, it remains an open question whether the voting result can be regarded as an earnings-related signal that is associated with shareholders' perceptions of earnings quality.

This question should be answered in this association study by examining whether the results of auditor ratification votes are associated with the decision-usefulness of earnings, and therefore, whether they might represent beneficial, comprehensive information for the capital market. Thus, this chapter aims to provide evidence on whether the results of auditor ratification votes are informative in assessing not only shareholders' satisfaction with auditor selection, but also their perceptions of earnings quality. Additionally, this chapter deals with cross-sectional differences in information asymmetries and sheds light on the following question: Does the association between shareholders' satisfaction with auditor selection and perceived

earnings quality depend on the level of information asymmetry between managers and shareholders?

4.1 Introduction

Shareholder activists and the Advisory Committee on the Auditing Profession (ACAP) demand mandatory shareholder ratification of auditors (ACAP 2008; Liu et al. 2009).[21] Furthermore, studies on auditor ratification suggest a linkage between audit quality-related issues and shareholders' voting decisions regarding the auditor (Dao et al. 2008; Hermanson et al. 2009; Liu et al. 2009; Mishra et al. 2005; Raghunandan 2003; Raghunandan and Rama 2003; Sainty et al. 2002), which reveal that shareholders consider their vote thoroughly and use it as a communication tool. Against the background that the objective of auditing is to safeguard that financial reports are credible, audit quality plays a vital role because it is an integral part of earnings quality (DeFond and Zhang 2014). As a consequence, shareholders' satisfaction with auditor selection—expressed in auditor ratification votes—could be an indicator of shareholders' expectations regarding earnings quality.

Nevertheless, shareholder voting on auditor ratification in the U.S. is normally a routine, non-binding action, and the share of votes for (supporting) the auditor's engagement is in the 95% region or higher. Moreover, the voting results tend to have relatively low variation across firms and years (Cunningham 2017; Glezen and Millar 1985; Liu et al. 2009). Accordingly, opponents of shareholder ratification of auditors might argue that the voting results are not informative and, hence, that their disclosure is meaningless. Supporting this notion, Cunningham (2017) observes no significant influence of financial restatements on auditor ratification votes, which would also mean that shareholders' satisfaction with auditor selection does not necessarily capture shareholders' perceptions of earnings quality. Thus, it remains questionable whether the disclosure of auditor ratification votes actually informs shareholders about earnings quality and, hence, is a matter of public interest. Therefore, this study aims to examine if there is empirical evidence that shareholders' satisfaction with auditor selection is related to the shareholders' assessment of earnings quality. This would imply that it is an informative earnings-related signal indicating shareholders' perceptions of earnings quality.

Interestingly, the SEC (2009) emphasized the importance of the results of auditor ratification votes by requiring its disclosure on Form 8-K effective from 2010. This disclosure requirement implies the relevance of the outcome of auditor ratification

[21] For example, see the petition for rulemaking (File No. 4–570) submitted to the SEC by the California State Teachers' Retirement System (`https://www.sec.gov/rules/petitions/2008/petn4-570.pdf`; accessed on October 1, 2018).

votes because the SEC's goal is to ensure the provision and disclosure of important information.[22] Indeed, the study of Tanyi and Roland (2017) shows that dissenting auditor ratification votes are associated with negative market reactions.[23] Thus, the auditor ratification vote seems to be important for shareholders. However, the question of whether shareholders' satisfaction with auditor selection is related to the shareholders' assessment of earnings quality has not been conclusively clarified. If this were the case, the results of auditor ratification votes should be associated with market reactions to reported unexpected earnings, which capture shareholders' perceptions of earnings quality. Finally, the results of auditor ratification votes could then be regarded as earnings-related information, and their disclosure could represent a signal to the market. Thus, this association study examines the relation between shareholders' satisfaction with auditor selection and shareholders' perceptions of earnings quality with the aim of closing the existing research gap.

Using an ERC model, the empirical evidence reveals that the decision-usefulness of earnings is associated with the results of auditor ratification votes: the higher the percentage of votes supporting an auditor's engagement, the higher the ERC and, hence, perceived earnings quality at the earnings announcement date.[24] Furthermore, this association appears to be stronger when firms are characterized by higher levels of information asymmetry between managers and shareholders. Thus, there is empirical support for the notion that the results of auditor ratification votes are earnings-related information that might help shareholders to make informed investment decisions.

This study contributes to the accounting and auditing literature in several ways. First, the auditor ratification literature is extended by showing that the results of auditor ratification votes are associated with market reactions to unexpected earnings, and therefore, appears to provide crucial earnings-related information to shareholders. Thus, the findings support that even non-mandatory and non-binding votes might benefit shareholders in making informed investment decisions. In particular,

[22] See `https://www.sec.gov/about/whatwedo.shtml`; accessed on October 1, 2018.

[23] Besides, the authors observe that also companies react to high voting dissent by auditor dismissal, which is also supported by the empirical findings of Barua et al. (2017).

[24] Indeed, it is understandable that the research design might be regarded as somewhat tautological if one assumes that shareholder voting on auditor ratification and the ERC are measures of the same construct, i.e., perceived audit quality. However, this argument does not contradict this study's reasoning that the voting results might yield information about perceived earnings quality. Finally, it is precisely the research question of this study whether the satisfaction with auditor selection is a useful assessment on which conclusions about shareholders' perceptions of earnings quality can be drawn.

shareholders' satisfaction with auditor selection might be regarded as an indicator of the decision-usefulness of earnings. Second, it is examined how the ERC is related to a comprehensive variable—shareholder votes in support of the auditor—which might capture shareholders' perceptions of the interaction of firm characteristics and the auditor's quality attributes in determining perceived earnings quality. Additional analysis reveals that it also provides incremental earnings-related information beyond that of other publicly available audit-related information. Third, by creating a direct link to shareholders' perceptions of earnings quality, this study corroborates to the conclusion of Tanyi and Roland (2017) that the SEC's requirement to disclose the results of auditor ratification votes seems appropriate. Finally, it reinforces the conjecture that "there is meaning to auditor ratification votes" (Mayhew 2017, 127), despite the low number of dissenting votes on average. Thus, it might be legitimate to more intensively debating policy recommendations regarding shareholder ratification of auditors—as is the case, for example, in the recently issued SEC (2015) Concept Release. The report by the ACAP (2008), which made a foray into this domain, is a natural focal point in this regard.

The remainder of this chapter is structured as follows: The next section contains the development of the two hypotheses. In section 4.3, the research design and the sample selection procedure are explained. The descriptive statistics and the empirical findings are discussed in section 4.4. Additional analyses are presented in section 4.5. The chapter closes with a summary and an examination of the study's limitations.

4.2 Hypotheses Development

4.2.1 Results of Auditor Ratification Votes: Earnings-Related Information?

As mentioned above, shareholder ratification of auditors in the U.S. is not mandatory, nor is the result binding. Moreover, the rates of votes in favor are generally extremely high and tend to have relatively low variation across firms and years (Cunningham 2017; Glezen and Millar 1985; Liu et al. 2009). Therefore, it is questionable whether the voting results really matter, especially if a considerable fraction of shareholders are passive in director elections or auditor ratification votes (Dao et al. 2008). In particular, it could be questioned whether the voting outcome as an expression of shareholders' satisfaction with managements' auditor selection is informative about shareholders' perceptions of earnings quality, and thus, represents earnings-related information.

Even if a regulatory change (NYSE Rule 452) in 2010 led more companies to seek shareholder ratification of auditors, procedural technicalities—this typically routine matter helps companies to achieve quorums in their annual general meetings—might have increased the importance of auditor ratification votes in recent years.[25] In short, there are several reasons why shareholders might not attach great importance to the results of auditor ratification votes (Hermanson et al. 2009). Thus, it appears unsurprising that the SEC (2003a) did not emphasize shareholders' role in electing, approving or ratifying the auditor but rather the role of the audit committee during the implementation of SOX (Brown 2012).

Another picture emerges, however, if one considers current regulations and related research. As previously mentioned, the SEC (2009) recently stressed the relevance of the results of auditor ratification votes by requiring its disclosure on Form 8-K. The SEC (2009) argues that the "disclosure of the voting results [...] would benefit investors and the markets." Consistently, Tanyi and Roland (2017) provide empirical evidence supporting the SEC's opinion by finding a negative association between dissenting auditor ratification votes and market reactions to the 8-K filings. This indicates that shareholders' satisfaction with auditor selection as expressed in auditor ratification votes is very much an important signal to the market. Nevertheless, it is of major interest whether this information is earnings-related and helps shareholders to assess earnings quality. This existing research gap should be closed by creating a

[25] See `ww2.cfo.com/risk-compliance/2010/06/more-shareholder-say-on-auditors/`; accessed on October 1, 2018.

direct link between auditor ratification votes and shareholders' perceptions of earnings quality.

The assumption that such a relation between shareholders' satisfaction with auditor selection and perceived earnings quality could exist, for one thing, is based on the existing literature. Recent evidence suggests that audit quality-related issues affect shareholders' decisions regarding auditor ratification. For example, the non-audit to audit fee ratio has a positive and significant effect on the percentage of shareholder votes against auditor ratification (Raghunandan 2003). In a similar vein, Mishra et al. (2005) find that shareholders perceive various categories of non-audit services differently. Another study notes that such empirical observations depend on the composition of the audit committee (Raghunandan and Rama 2003). Sainty et al. (2002) reveal, among other findings, that engagements of less-credible auditors and going concern opinions affect the proportion of votes opposed to auditor ratification. Partially conflicting with the results of Dao et al. (2008), no effect is observed for variables relating to the auditor's industry specialization or audit tenure. There is also evidence that an adverse Section 404 internal control opinion (Hermanson et al. 2009) and financial restatements (Liu et al. 2009) influence shareholders' voting behavior.[26]

The conjecture mentioned above could be supported by the fact that shareholder voting on auditor ratification is one of the few or possibly the only opportunity for shareholders to express their views concerning the auditor (Marshall 2005; Sainty et al. 2002; Saul 1996). Furthermore, two recent studies point to consequences associated with auditor ratification votes in terms of auditor dismissals (Barua et al. 2017; Tanyi and Roland 2017). Thus, it appears reasonable that shareholder activists and the ACAP (2008) demand mandatory shareholder ratification of auditors.[27]

Why the voting results could be regarded as an indicator of not only perceived audit quality, but also of perceived earnings quality is explained in more detail below. The demand for auditing arose from the need for assurance as a result of information asymmetries and agency conflicts (Cahan et al. 2009; Healy and Palepu 2001).

[26] In contrast, Cunningham (2017) finds no significant association between financial restatements and the results of auditor ratification votes. Furthermore, Son et al. (2017) cannot observe higher votes against auditor ratification if the auditor receives an unfavorable PCAOB inspection report.

[27] Consistent with this point, the SEC (2003a) clarified that although the audit committee's responsibility is to appoint the auditor (Exchange Act Rule 10A-3), this responsibility does not conflict with or oppose shareholder ratification of auditors.

Thus, the objective of external audits is to contribute to mitigating the agency problem by assuring sufficient earnings quality (Watts and Zimmerman 1983), which implies that audited financial reports should provide decision-useful information. Further, the two fundamental requirements of decision-useful information are relevance and reliability (FASB 1978; FASB 2010).[28] Assuming a given level of relevance, an audit's purpose is to safeguard an adequate degree of reliability (FASB 1978). Consistently, the prior literature shows that shareholders' perceptions of earnings quality are influenced by perceived audit quality (Francis 2004).

Moreover, earnings quality also depends on pre-audit quality, which is influenced by the innate characteristics and the reporting system of the company (DeFond and Zhang 2014). Since management is responsible for the preparation of the financial statements, it is also of central importance in this context. The manager, therefore, has a decisive influence on both the quality of the unaudited financial statements and the selection of the auditor (Mayhew 2017). If the auditor does not try to reduce agency costs in the interests of the shareholders but acts in favor of the management, earnings quality will be impaired (Sunder 2002). Since the shareholders have the opportunity in this context to monitor the management by voting on auditor ratification at the annual general meeting, shareholders' satisfaction with the selected auditor expressed in this vote should reflect a comprehensive view of managers' commitment to mitigating agency costs through high earnings quality. Accordingly, shareholders will be satisfied with the auditor selection only if, in their opinion, earnings quality is acceptable.

Thus, the results of auditor ratification votes interpreted as shareholders' satisfaction with auditor selection should allow inferences regarding shareholders' assessment of earnings quality. In turn, shareholders' opinions regarding managers' auditor selection would constitute earnings-related information whose disclosure might help shareholders to make informed investment decisions. The alternative form of Hypothesis 1 is stated as follows:

***H1**: Shareholders' satisfaction with auditor selection—expressed by supporting auditor ratification votes—is positively associated with perceived earnings quality.*

[28] The term "reliability", which is used throughout this thesis, is not entirely accurate under the current nomenclature of the FASB ("faithful representation"). For a brief discussion on this topic, please refer to FASB (2010).

4.2.2 Results of Auditor Ratification Votes and Information Asymmetries between Managers and Shareholders

A wide variety of studies focus on measuring the extent to which auditing can effectively mitigate agency costs due to information asymmetries between managers and shareholders by assuring sufficient earnings quality (Jensen and Meckling 1976; Watts and Zimmerman 1983).[29] It is often argued that auditing enhances the reliability of accounting information—i.e., earnings quality—because it acts as a monitoring instrument and reduces information asymmetries between management and shareholders (DeAngelo 1981b). Even if the importance of earnings quality differs for various groups of shareholders—e.g., major versus minor shareholders—the common argument should hold for an average firm. However, some recent contributions express general doubts concerning the extent to which accounting reports provide new information to shareholders (Ball 2013) and whether earnings quality may have direct effects on a firm's value (Zimmerman 2013). For instance, Ball et al. (2012) show that audited financial reports and other disclosed private information—such as voluntary management earnings forecasts—are complements rather than substitutes.[30]

Nevertheless, if there is at least a second- or third-order effect of different levels of earnings quality on firm values—as posited by Zimmerman (2013)—it is assumed that the following reasoning holds: higher levels of information asymmetry mean that the credibility of audited financial statements increases in importance (Kothari 2000). Moreover, this phenomenon can be explained by higher agency costs due to more complicated monitoring of the manager. Accordingly, on the one hand, the demand for assurance is higher and, on the other hand, the auditor ratification vote as a monitoring mechanism gains importance. Therefore, it would make sense for shareholders to consider the formation of opinions on the management's auditor selection more intensively. This could lead to the assumption that the earnings-relation will be strengthened, which in turn would corroborate the view that earnings quality is what drives shareholders' satisfaction with auditor selection.

[29] In addition to agency conflicts, other issues also determine the demand for audits (cf. Francis et al. 2011).

[30] Therefore, it is questionable whether the audited reported earnings fulfill a confirmation function rather than to be a primary information source (Ball and Shivakumar 2008; Gigler and Hemmer 1998). Contradicting this perspective, Basu et al. (2013) argue that reported earnings represent a crucial source of new information.

Thus, the second hypothesis in alternative form is as follows:

***H2**: The association between shareholders' satisfaction with auditor selection and perceived earnings quality is intensified by the level of information asymmetry between managers and shareholders.*

4.3 Research Design and Sample Selection

4.3.1 Research Design

4.3.1.1 Conceptual Model

Since this study is interested in whether shareholders' satisfaction with auditor selection could be regarded as earnings-related information, the empirical research design focuses on the earnings number. Therefore, a returns-earnings methodology is used to answer the research question. The conceptual model is illustrated by the predictive validity framework in Figure 4.1 (cf. Kinney and Libby 2002).

This study aims to contribute to answering the question of whether shareholders' satisfaction with auditor selection is informative regarding shareholders' perceptions of earnings quality (link 1). It is essential to mention here that the research question is not aimed at a causal influence of one concept on the other (Gow et al. 2016). Accordingly, no assumption is made regarding a direction of influence, which is shown by the non-existent arrowhead in Figure 4.1 (link 1). Therefore, this chapter provides an association study that tests the existence of a relation between shareholders' satisfaction with auditor selection and shareholders' perceptions of earnings quality. To test this relation (link 5), operational measures for the theoretical concepts are needed. As previously mentioned, shareholders' satisfaction with auditor selection is measured based on auditor ratification votes (link 2). The ERC is used to measure perceived earnings quality (link 3). The measurement of the dependent variable and the independent variable of interest will be discussed further in the following subsections. In addition, important control variables affecting the independent and dependent variables (link 4) are described alongside the model specification. Based on the empirical evidence in link 5, conclusions regarding link 1 can be drawn.

Additionally, this study is interested in whether the relation between shareholders' satisfaction with auditor selection and perceived earnings quality (link 1, *H1*) depends on the level of information asymmetry between managers and shareholders (link 6, *H2*). Thus, it is empirically tested whether the observed association of link 5 is conditional on the level of information asymmetry between managers and shareholders (link 8). Therefore, total strategic holdings and the dispersion of analysts' forecasts are used as empirical proxies for information asymmetries between managers and shareholders (link 7).

Figure 4.1: Conceptual Model: Shareholders' Satisfaction with Auditor Selection and Perceived Earnings Quality

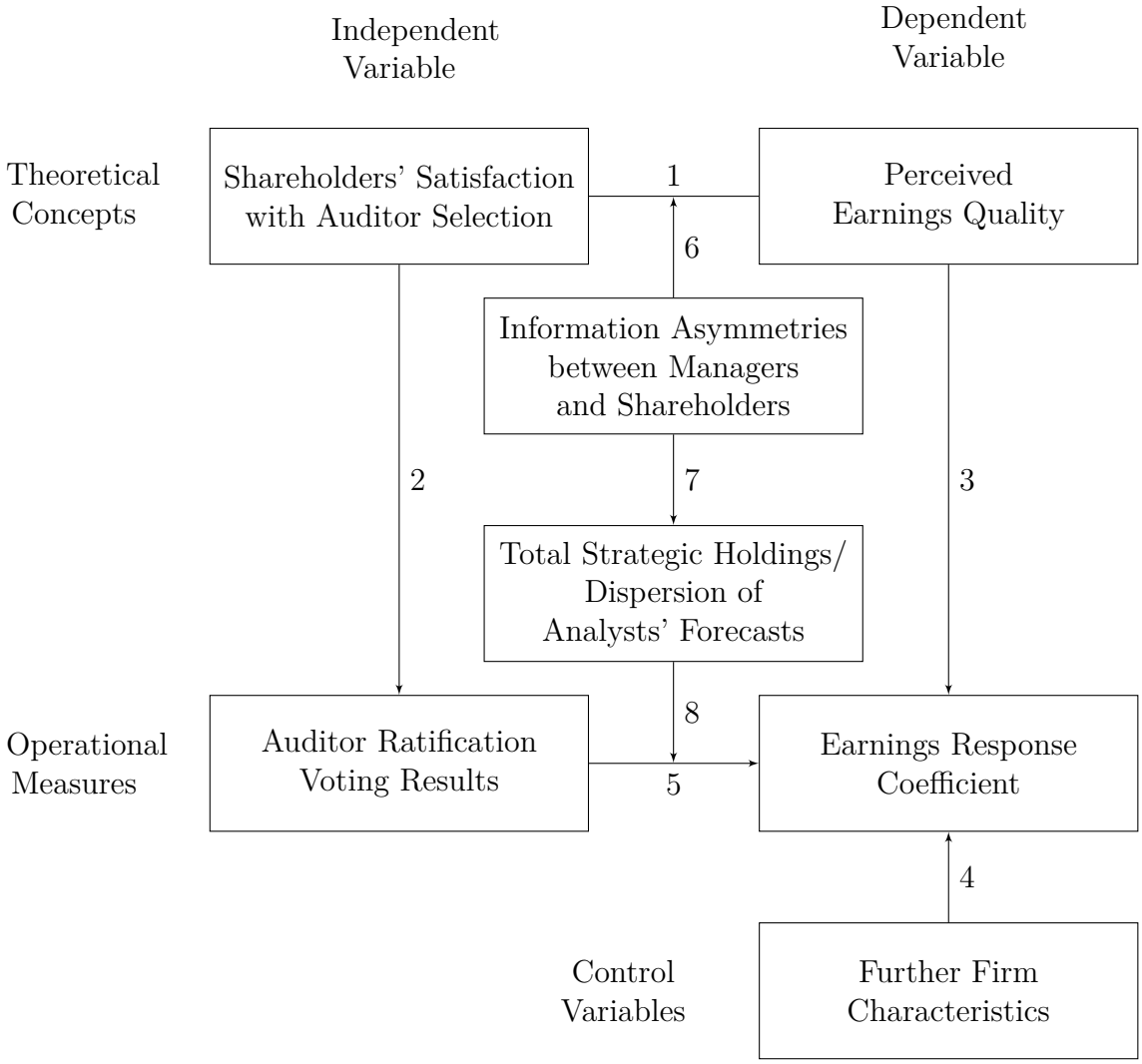
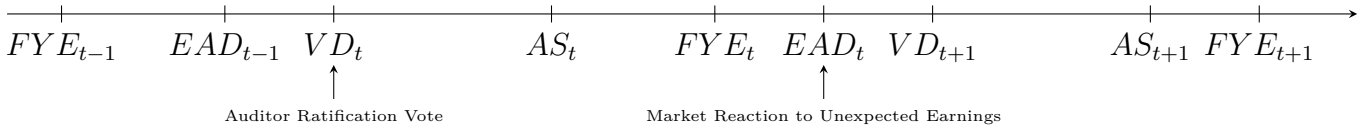


Figure 4.2: Timeline of Auditor Ratification Voting Date, Beginning of the Audit Process, Fiscal Year-end Date, and Earnings Announcement Date



Note:

VD_t	Auditor ratification voting date for fiscal year t.
AS_t	Beginning of the audit process for fiscal year t.
FYE_t	Fiscal year-end date of fiscal year t.
EAD_t	Earnings announcement date for fiscal year t.

This study hypothesizes that the results of auditor ratification votes contain earnings-related information that serves as an indicator of perceived earnings quality. However, it is an association study that does not make any assumptions about the direction of the association between the dependent variable and the variable of interest. Nevertheless, the timeline in Figure 4.2 illustrates the time sequence of the measurement of the two variables. The auditor ratification vote takes place at the voting date (VD_t). The vote occurs before the audit of the financial statement begins (AS_t).[31] At a later date (i.e., the earnings announcement date, EAD_t), the market reaction to unexpected earnings is observable, as is shareholders' perception of earnings quality.

The announcement date of the annual earnings is considered and chosen, as the annual financial statements but not the quarterly reports are subject to statutory audit. In addition, the selection of the auditor is forward-looking, and therefore, examining the earnings announcement date subsequent to the auditor ratification vote is the logical consequence, especially if one is interested in whether the voting result is earnings-related information and whether its disclosure could help shareholders to make informed investment decisions. For this to be the case, shareholders' satisfaction with auditor selection—measured at the voting date—should be related to shareholders' perceptions of earnings quality at the earnings announcement date.

4.3.1.2 Measure of Shareholders' Satisfaction with Auditor Selection

Prior research indicates that the opportunity for shareholders to ratify an auditor might be important, particularly because such a vote is one of the few—if not the only—situation in which shareholders can express their assessment of the auditor and possibly earnings quality (Marshall 2005; Sainty et al. 2002). In addition, a regulatory change (NYSE Rule 452) in 2010 led more companies to seek shareholder ratification of auditors because this typically routine matter helps companies to reach quorums for their annual general meetings. Moreover, the voluntary auditor ratification votes are considered as a sign of good corporate governance and were conducted annually by over 90% of the Russel 3000 companies (Cunningham 2017). In contrast, director elections do not necessarily take place at every annual general meeting. Finally, the SEC's requirement to disclose the annual general meetings' voting results on Form 8-K makes it possible to conduct an investigation and thus

[31] This should not be interpreted too literally since contemporary audits are often characterized by a continuing audit process.

offers an outstanding opportunity to shed more light on the views of shareholders. This situation explains the great research interest that has recently been shown in the Auditor Ratification Research Forum in the American Accounting Association Journal *Accounting Horizons* (cf. Mayhew 2017).

Therefore, as previously mentioned, auditor ratification votes at annual general meetings play a crucial role in this study. The variable *VOTEFOR* indicates shareholders' satisfaction with auditor selection. *VOTEFOR* equals the shareholder voting result in percentage terms with respect to the votes for (supporting) the auditor ratification (Cai et al. 2009; Glezen and Millar 1985). Whether this clear measure of shareholders' satisfaction (Sainty et al. 2002) is related to perceived earnings quality should be considered in this study. Therefore, shareholders' perceptions of earnings quality need to be measured.

4.3.1.3 Measure of Perceived Earnings Quality

The purpose of accounting is to provide information to users of financial statements that is useful for their decision-making process (Dechow et al. 2010; Gaynor et al. 2016). High earnings quality in the sense of decision-usefulness is again fundamentally characterized by the relevance and reliability of the financial statement information (FASB 1978; FASB 2010). Even if the qualitative characteristics of decision-useful information and, hence, earnings quality are not directly observable, market reactions to reported earnings make it possible to measure shareholders' related perceptions (Holthausen and Verrecchia 1988; Kormendi and Lipe 1987; Lev 1989). On the basis of an event study, an attempt is made to measure how new information, such as the earnings announcement, is reflected in shareholders' market reactions (Collins and Kothari 1989). The ERC then indicates the level of the price-revision of the market's previous expectations per unit of unexpected earnings—the so-called earnings surprise (Kothari 2001). The ERC is thus derived directly from shareholders' investment decisions determining the capital allocation and describes shareholders' reliance on the reported earnings information.

Consequently, the ERC metric is a well-established measure of perceived earnings quality in accounting and auditing research (Chen et al. 2010; Francis and Ke 2006; Krishnan and Ye 2005; Teoh and Wong 1993). A closer examination of the studies in the field of auditing shows that perceived earnings quality is conditional on various combinations of firm characteristics (e.g., board composition, the audit committee, and internal controls) and auditor characteristics (e.g., Big N auditor,

specialization, and independence). Therefore, it might be beneficial to have a comprehensive indicator—such as the results of auditor ratification votes—regarding shareholders' confidence in the reliability of financial statements. The underlying open question is whether shareholders' satisfaction with auditor selection expressed in the auditor ratification vote captures shareholders' perceptions of earnings quality. Although Tanyi and Roland (2017) observe a negative association between votes against auditor ratification and market reactions, there is no evidence on whether shareholders' satisfaction with auditor selection constitutes earnings-related information. Thus, using the ERC research methodology, this study tries to close this research gap by focusing on the association of the results of auditor ratification votes and the decision-usefulness of the earnings number.

4.3.1.4 Measure of Information Asymmetries between Managers and Shareholders

Besides the primary question of whether there is an association between shareholders' satisfaction with auditor selection and perceived earnings quality, this study is interested in the moderating effect of the level of information asymmetry between managers and shareholders. To examine how information asymmetries between managers and shareholders influence the relation of *VOTEFOR* and the ERC, and therefore, to test *H2*, two different proxies are used.

The first variable refers to the firm's ownership structure and, hence, the possible existence and complexity of information asymmetries. It might be argued that ordinary shareholders face higher levels of information asymmetry than do major shareholders (Jensen and Meckling 1976). Major shareholders might have access to non-public information sources (e.g., via appointed board members) and, as a result, are not as reliant on published audited financial reports (Ajinkya et al. 2005). Therefore, agency costs depend on monitoring costs, which vary with the level of ownership dispersion (Watts and Zimmerman 1979). This argument is also empirically supported by the prior literature, which finds a negative relation between concentrated ownership and earnings management (Albersmann and Hohenfels 2017). The line of reasoning regarding *H2* can thus be further specified: higher levels of dispersed ownership mean that there are higher levels of information asymmetry in principle, and as a result, that shareholders will demand that published financial reports have higher levels of reliability. In line with this reasoning, Kothari (2000, 90) states: "Demand, and therefore supply, of quality financial information will be

high if corporations are best described as owned by widely dispersed, individually atomistic shareholders." Accordingly, the results of auditor ratification votes should become more important.

As an inverse measure of dispersed ownership and related information asymmetries, a variable called total strategic holdings (*TSH*) is introduced. It is defined as the percentage of total shares in issue not available to ordinary investors (percentage of total shares in issue of 5% or more held strategically; Laksmana 2008). In other words, it equals 1 minus free float. Besides, *TSH* could also be interpreted as a measure for the presence of insiders (Leuz 2003).

The second variable (*DOAF*) refers to the dispersion of analysts' forecasts—i.e., the standard deviation of the analysts' earnings per share forecasts for the respective fiscal year scaled by reported earnings for this fiscal year—and approximates information asymmetries related to the firm's disclosure policy and its informativeness (Lang and Lundholm 1996).[32] Higher levels of information asymmetry should lead to increased disagreement among analysts and, hence, to an increase in the standard deviation of analysts' forecasts (Krishnaswami and Subramaniam 1999). To partly mitigate these information asymmetries, the market should demand higher levels of credibility for available information (e.g., published financial reports) and, as argued above, the results of auditor ratification votes thus gain relevance.

In conclusion, the association between shareholders' satisfaction with auditor selection and perceived earnings quality should be intensified by the level of information asymmetry between managers and shareholders. Accordingly, the relation in *H1* is expected to be weaker when this inverse measure of information asymmetries (*TSH*) is higher and to be stronger for higher levels of *DOAF*.

4.3.1.5 Model Specification and Control Variables

Test of Hypothesis 1: Results of Auditor Ratification Votes: Earnings-Related Information?

As mentioned above, a short-window event study is employed to measure the market reaction to earnings surprises. Following prior research (Lev 1989), the price reaction around a firm's fiscal year-end earnings announcement is measured by *CAR*, which represents the cumulative abnormal stock return over the Standard and Poor's

[32] The results presented later are qualitatively similar if the stock price deflates the standard deviation of the analysts' earnings forecasts according to Lang and Lundholm (1996).

500 Composite return computed for the 3-day window, i.e., -1 trading day to +1 trading day relative to the earnings announcement date.[33]

To test the hypotheses, the variable *SURP* is introduced, which is defined as the earnings surprise for the respective fiscal year. *SURP* is calculated as the reported earnings per share for the respective fiscal year minus the mean analysts' earnings per share forecast for this fiscal year one week before the earnings announcement date, scaled by the firm's stock price 2 trading days before the earnings announcement date. Furthermore, as mentioned above, *VOTEFOR* represents the shareholder voting result in percentage terms with respect to the votes for (supporting) the auditor ratification. Ultimately, the ERC is determined by the variable *SURP*, its interaction with *VOTEFOR*, its interactions with the control variables described below, and its interactions with industry and year dummies.

The model to test *H1*—concerning the question of whether the results of auditor ratification votes are important market-related information—is specified as follows:

$$\begin{aligned} CAR_{it} = {} & \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} \\ & + \sum_{j=4}^{10} \beta_j CONTROL_{it} + \sum_{j=11}^{17} \beta_j CONTROL_{it} \times SURP_{it} \\ & + \sum_{j=18}^{25} \beta_j IND_{it} + \sum_{j=26}^{33} \beta_j IND_{it} \times SURP_{it} \\ & + \sum_{j=34}^{36} \beta_j YEAR_{it} + \sum_{j=37}^{39} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}\,, \end{aligned} \tag{4.1}$$

where:

$$\begin{aligned} CONTROL_{it} = \big\{ & SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, \\ & ANALYST_{it} \big\}. \end{aligned}$$

The set of control variables (*CONTROL*) is introduced to account for additional firm characteristics (Balsam et al. 2003; Higgs and Skantz 2006; Teoh and Wong 1993). Firm size (*SIZE*) is measured as the natural logarithm of the market value of equity (Atiase 1985).[34] The market-to-book value of equity (*MB*) proxies

[33] The calculation is based on the market model estimated over the 180-day window ending 21 trading days before the earnings announcement date. Following Bergh and Gibbons (2011), a sufficiently long event window must be chosen to capture the market's price response to unexpected earnings. However, the window should also remain as short as possible to guard against confounding events (McWilliams and Siegel 1997).

[34] The use of the natural logarithm of total assets to proxy for firm size according to Balsam et al. (2003) does not alter the results presented later.

for a firm's growth opportunities (Hackenbrack and Hogan 2002). Following Higgs and Skantz (2006), an indicator variable (*MBNEG*) controls for a negative *MB*. A negative *MB* value is replaced with 0 because negative *MB* ratios are not economically reasonable. With respect to a firm's risk, two independent variables are included in the regression. On the one hand, a firm's financing structure is represented by its leverage ratio (*LEV*), which is calculated as total debt to total capital plus short-term debt plus the current portion of long-term debt (Baber et al. 2014).[35] On the other hand, the beta factor (*BETA*) captures a firm's systematic risk (Collins and Kothari 1989).[36] Further, an indicator variable (*SURPNEG*)—equal to 1 for negative values of *SURP*, and 0 otherwise—is introduced because shareholders capitalize unexpected negative and positive earnings differently (Basu 1997).[37] It is also controlled for variations in a firm's pre-disclosure environment (Bhushan 1989; Teoh and Wong 1993), and the related variable is calculated as the natural logarithm of 1 plus the number of analysts following the firm (*ANALYST*). Finally, *IND* is a set of eight industry dummies based on the Standard Industrial Classification (SIC) Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration, and *YEAR* represents three year dummies. The model is estimated using an ordinary least squares (OLS) regression with standard errors clustered by firm. Table 4.1 shows the detailed variable definitions.

[35] The findings presented later remain the same if leverage is measured as total debt to common equity (Francis and Ke 2006).

[36] Including beta factors calculated over five years with monthly data at the fiscal year-end dates instead of those from the market model regression leads to the same conclusions as made later in the study.

[37] In an untabulated regression, a loss indicator is included instead of *SURPNEG* as a robustness check (Chen et al. 2014; Krishnan and Ye 2005).

Table 4.1: Variable Definitions

Variable	Definition
	Dependent Variable
CAR	Cumulative abnormal stock return over the Standard and Poor's 500 Composite return computed for the 3-day window, i.e., -1 trading day to +1 trading day relative to the earnings announcement date. The calculation is based on the market model estimated over the 180-day window ending 21 trading days before the earnings announcement date.
	Variables of Interest
SURP	Reported earnings per share for the respective fiscal year minus the mean analysts' earnings per share forecast for this fiscal year one week before the earnings announcement date, scaled by the firm's stock price 2 trading days before the earnings announcement date.
VOTEFOR	Shareholder voting result in percentage terms with respect to the votes for (supporting) the auditor ratification.
TSH	Percentage of total strategic share holdings of 5% or more.
DOAF	Standard deviation of the analysts' earnings per share forecasts for the respective fiscal year scaled by reported earnings for this fiscal year.
	Control Variables
SIZE	Natural logarithm of the market value of equity.
MB	Market-to-book value, calculated as market value divided by book value of common equity for firms with positive market-to-book values, and 0 otherwise.
MBNEG	Indicator variable equal to 1 if a firm has a negative market-to-book value, and 0 otherwise.
LEV	Leverage, defined as long-term debt plus short-term debt plus the current portion of long-term debt divided by total capital plus short-term debt plus the current portion of long-term debt.
BETA	Beta factor from the market model regression.
SURPNEG	Indicator variable equal to 1 if a firm has a negative earnings surprise (*SURP*), and 0 otherwise.
ANALYST	Natural logarithm of 1 plus the number of analysts following the firm.
	Fixed Effects Variables
IND	Set of eight industry dummies based on the SIC Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration (`https://www.osha.gov/pls/imis/sic_manual.html`; accessed on October 1, 2018).
YEAR	Set of three year dummies.
	Additional Analyses Variables
INDLEADER	Indicator variable equal to 1 if the firm's auditor is the national annual audit fee market share leader in the firm's industry, and 0 otherwise.
NAFAF	Ratio of non-audit to audit fees.
AUDCH	Indicator variable equal to 1 if the firm changed its auditor, and 0 otherwise.
AUD	Set of three auditor dummies.

Note: This table presents the variable definitions.

Test of Hypothesis 2: Results of Auditor Ratification Votes and Information Asymmetries between Managers and Shareholders

In contrast to Equation 4.1, the model to test *H2* must include additional two- and three-way interactions. These are excluded in the regression of *H1* because it is first focused on the marginal effect of *VOTEFOR* on the ERC. This effect can be analyzed directly in Equation 4.1 and does not depend on other regressors, i.e., the three-way interaction term, as is the case in Equation 4.2. Based on the discussion concerning *H2*, the following model is tested:

$$\begin{aligned} CAR_{it} = {} & \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} \\ & + \beta_4 VOTEFOR_{it} \times IA_{it} \times SURP_{it} + \beta_5 IA_{it} + \beta_6 VOTEFOR_{it} \times IA_{it} \\ & + \beta_7 IA_{it} \times SURP_{it} + \sum_{j=8}^{14} \beta_j CONTROL_{it} + \sum_{j=15}^{21} \beta_j CONTROL_{it} \times SURP_{it} \\ & + \sum_{j=22}^{29} \beta_j IND_{it} + \sum_{j=30}^{37} \beta_j IND_{it} \times SURP_{it} \\ & + \sum_{j=38}^{40} \beta_j YEAR_{it} + \sum_{j=41}^{43} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}\,, \end{aligned} \tag{4.2}$$

where:

$$\begin{aligned} CONTROL_{it} = \big\{ & SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, \\ & ANALYST_{it} \big\}. \end{aligned}$$

IA is a proxy for information asymmetries and the sets of further variables, *CONTROL*, *IND*, and *YEAR* remain the same as in Equation 4.1. To examine how information asymmetries (*IA*) between managers and shareholders influence the effect of *VOTEFOR* on the ERC, two proxies introduced above (*TSH* and *DOAF*) are used.

4.3.2 Sample Selection

The data for the sample are taken from four databases: Audit Analytics, Datastream, Institutional Brokers' Estimate System (I/B/E/S) and Worldscope. First, Audit Analytics is used. As the main variables of interest refer to auditor ratification by shareholders, 15,703 firm-year observations from SEC registrants for fiscal years 2010, 2011, 2012 and 2013 are initially obtained. In addition, Audit Analytics provides information on other variables regarding auditors and formal information

on financial statements (e.g., fiscal year-end date). Because this information is taken from subdatabases of Audit Analytics, 10,395 firm-years are eventually obtained. Datastream is the source for all financial market-related variables, such as daily stock prices. Balance sheet and income statement data are collected from Worldscope. Using both databases, the sample decreases by 472 observations. It is commonly acknowledged that I/B/E/S typically causes the largest decline in sample size because its coverage tends to be biased toward larger firms.[38] However, this problem concerns information that is relevant to calculating the earnings surprise—i.e., earnings per share and analysts' forecasts—and the calculation of the variable *ANALYST*.

The sample consists of 7,158 firm-years after merging all four databases. Subsequently, the sample decreases to 7,042 firm-years of 10-K filers. On the one hand, significant inconsistencies in the dataset (e.g., overlapping dates regarding the voting date for the fiscal year and the earnings announcement date for the previous fiscal year) are controlled for. On the other hand, firm-years with time lags greater than 365 days between the auditor ratification vote and the earnings announcement are deleted. This should ensure that the data related to auditor ratification remain relevant with respect to time. In addition, 16 observations concerning penny stocks are deleted because the literature shows that such stocks are frequently associated with price anomalies (Ball et al. 1995; Bhardwaj and Brooks 1992). Moreover, the analysts' forecasts must be economically meaningful and approximate the market opinion. Hence, analysts' earnings forecasts are employed only if at least three analyst estimates are available (Barron et al. 2002; Imhoff and Lobo 1992).[39] Finally, 8 firm-years are lost because these firms report earnings per share of zero, and hence, the variable *DOAF* could not be calculated. The final sample consists of 6,621 firm-year observations from 2,359 different firms. Table 4.2 outlines the sample selection procedure in Panel A and the sample composition by industry in Panel B. Even if it differs slightly from other samples (e.g., Ball and Shivakumar 2008; Krishnan and Ye 2005), no industry is largely overrepresented.

[38] There are further problems regarding I/B/E/S or, generally, in using analyst forecast data; see, for example, Easterwood and Nutt (1999) or Zhang (2006).

[39] This step in the sample selection process also indirectly addresses possible problems of stale forecasts. Nevertheless, this procedure might strengthen the sample's large firm bias that is already present from using I/B/E/S analyst forecast data. Therefore, as a robustness check, the regressions of *H1* and *H2* are re-estimated based on a sample that includes the 397 firm-years in question.

Table 4.2: Sample Selection and Sample Composition by Industry

Panel A: Sample Selection

	Firm-Years
Initial sample of SEC registrants with shareholder voting results for the ratification of auditors for the fiscal years 2010, 2011, 2012 or 2013 in Audit Analytics.	15,703
Less: Firm-years with more than one shareholder voting (date) for the auditor ratification in a respective fiscal year.	196
Less: Firm-years with a lack of data regarding other used variables from Audit Analytics.	5,112
	10,395
Less: Firm-years with a lack of data in Datastream.	466
	9,929
Less: Firm-years with a lack of data in Worldscope.	6
	9,923
Less: Firm-years with a lack of data in I/B/E/S.	2,765
	7,158
Less: Firm-years with inconsistent data; e.g., a negative time lag between the voting date and the earnings announcement date or filing date.	111
	7,047
Less: Firm-years with a lag greater than 365 days between voting date and earnings announcement date.	5
	7,042
Less: Firm-years referring to penny stocks, i.e., the price 3 trading days before the earnings announcement date is less than $1.	16
	7,026
Less: Firm-years with fewer than three analysts following.	397
	6,629
Less: Firm-years with announced earnings per share of zero.	8
Final sample	**6,621**

Panel B: Sample Composition by Industry

SIC	**Division**	**Sample (%)**
100–999	Agriculture, Forestry, and Fishing	0.20
1000–1499	Mining	6.46
1500–1799	Construction	1.80
2000–3999	Manufacturing	36.76
4000–4999	Transportation, Communications, Electric, Gas, and Sanitary Services	10.15
5000–5199	Wholesale Trade	1.95
5200–5999	Retail Trade	4.18
6000–6799	Finance, Insurance, and Real Estate	21.93
7000–8999	Services	16.57
Total		**100**

Note: This table presents the sample selection procedure (Panel A) and the sample composition by industry (Panel B).

4.4 Empirical Analyses

4.4.1 Descriptive Statistics

Certain aspects of the summary statistics warrant highlighting. The variables *CAR* and *SURP* are both close to zero, whether focusing on the mean or the median. On average, 98.30% of all shareholders vote for (supporting) the auditor's engagement, which is comparable to previous research. Although there is evidence that acceptance levels decreased at the beginning of the 2000s (Hermanson et al. 2009) and that the auditor ratification vote gained increasing importance in the aftermath of Enron (Raghunandan and Rama 2003), the sample does not confirm such trends. The percentage of total shares in issue not available to ordinary investors varies between 0.00% and 69.00%, whereby approximately three-quarters of all observations are characterized by free floats of at least 73.00% (equals a *TSH* of 27.00%). *DOAF* ranges from 0.000 to 1.333. The median observation exhibits an untransformed market value of equity of $1.517 billion. Apart from *DOAF*, the highest noticeable skewness and kurtosis concern the variables *MB* (median: 1.980) and *MBNEG* (median: 0.000), which signifies the possible influence of outliers. Less than 3% of all the market-to-book ratios are negative, and therefore, *MB* is replaced with 0. *LEV* ranges from 0.000 to 1.459, indicating that the pooled sample contains firms financed solely by equity and indebted firms. The beta's mean equals 1.210. Further, approximately 34% of all observations show a negative earnings surprise. The median observation has approximately 9 analysts following the firm. Table 4.3 presents the summary statistics of the pooled sample.

In addition, Table 4.4 shows the Pearson product-moment correlation coefficients. Except for the correlation between *SIZE* and *ANALYST*, an analysis of these values does not indicate potential collinearity problems. Nevertheless, this simple procedure may be insufficient. Because the two regressions (Equation 4.1 and Equation 4.2) include two- and three-way interactions, collinearity is present by construction.[40] However, that is not problematic as long as the collinear variables are significant and the F-statistic indicates the rejection of the null hypothesis that all coefficient estimates are jointly zero (Brambor et al. 2006; Eilifsen and Knivsfla 2013).

[40] Indeed, the variance inflation factors (VIF) indicate that possible collinearity problems might be present. However, if all interaction terms and industry dummies in Equation 4.1—and, therefore, the "constructed collinearity"—are excluded, the highest VIF is 2.43 for the *SIZE* variable.

Table 4.3: Descriptive Statistics

	Mean	**Std. Dev.**	**25%**	**50%**	**75%**	**Min.**	**Max.**
CAR	0.001	0.068	-0.033	0.001	0.036	-0.215	0.195
SURP	0.000	0.012	-0.001	0.000	0.002	-0.067	0.046
VOTEFOR	98.297	2.216	98.020	98.960	99.530	85.740	99.990
TSH	0.195	0.148	0.090	0.170	0.270	0.000	0.690
DOAF	0.080	0.186	0.011	0.023	0.063	0.000	1.333
SIZE	21.226	1.635	20.053	21.140	22.274	17.784	25.539
MB	3.222	4.016	1.250	1.980	3.470	0.000	27.590
MBNEG	0.029	0.168	0.000	0.000	0.000	0.000	1.000
LEV	0.349	0.288	0.110	0.332	0.518	0.000	1.459
BETA	1.210	0.424	0.915	1.167	1.482	0.320	2.370
SURPNEG	0.344	0.475	0.000	0.000	1.000	0.000	1.000
ANALYST	2.371	0.608	1.792	2.303	2.890	1.386	3.638
n	6,621						

Note: This table presents the descriptive statistics for the pooled data. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The variables are as defined in Table 4.1.

Table 4.4: Pearson Product-Moment Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) *CAR*	1.000											
(2) *SURP*	0.164	1.000										
	(0.000)											
(3) *VOTEFOR*	-0.007	0.023	1.000									
	(0.578)	(0.062)										
(4) *TSH*	-0.007	-0.009	0.141	1.000								
	(0.546)	(0.487)	(0.000)									
(5) *DOAF*	-0.019	-0.094	-0.007	0.026	1.000							
	(0.121)	(0.000)	(0.576)	(0.036)								
(6) *SIZE*	0.012	0.055	0.018	-0.248	-0.186	1.000						
	(0.337)	(0.000)	(0.150)	(0.000)	(0.000)							
(7) *MB*	0.006	-0.009	0.006	0.046	0.002	0.083	1.000					
	(0.615)	(0.470)	(0.635)	(0.000)	(0.884)	(0.000)						
(8) *MBNEG*	-0.009	-0.008	0.020	0.005	0.016	-0.042	-0.139	1.000				
	(0.484)	(0.526)	(0.104)	(0.683)	(0.182)	(0.001)	(0.000)					
(9) *LEV*	0.007	-0.046	0.009	-0.061	0.040	0.153	0.021	0.473	1.000			
	(0.571)	(0.000)	(0.484)	(0.000)	(0.001)	(0.000)	(0.095)	(0.000)				
(10) *BETA*	-0.006	-0.014	-0.024	0.059	0.109	-0.138	0.008	0.027	-0.004	1.000		
	(0.617)	(0.240)	(0.052)	(0.000)	(0.000)	(0.000)	(0.496)	(0.026)	(0.765)			
(11) *SURPNEG*	-0.242	-0.494	-0.016	0.010	0.127	-0.100	-0.015	0.024	0.063	0.044	1.000	
	(0.000)	(0.000)	(0.186)	(0.395)	(0.000)	(0.000)	(0.211)	(0.053)	(0.000)	(0.000)		
(12) *ANALYST*	0.012	0.036	-0.004	-0.241	-0.117	0.746	0.075	-0.018	0.098	-0.024	-0.080	1.000
	(0.333)	(0.004)	(0.719)	(0.000)	(0.000)	(0.000)	(0.000)	(0.134)	(0.000)	(0.050)	(0.000)	

Note: This table shows the Pearson product-moment correlation coefficients for the pooled data. All continuous variables are winsorized at the 1st and 99th percentiles. The numbers in parentheses indicate two-tailed p-values. The variables are as defined in Table 4.1.

4.4.2 Multivariate Analyses

4.4.2.1 Results of Auditor Ratification Votes: Earnings-Related Information?

In essence, the question of interest in *H1* is technically whether *VOTEFOR* is related to the ERC. The ERC is given as the first derivative of Equation 4.1 with respect to *SURP*.

$$\begin{aligned} ERC &= \frac{\partial CAR}{\partial SURP} \\ &= \beta_1 + \beta_3 VOTEFOR_{it} + \sum_{j=11}^{17} \beta_j CONTROL_{it} + \sum_{j=26}^{33} \beta_j IND_{it} + \sum_{j=37}^{39} \beta_j YEAR_{it} \end{aligned} \tag{4.3}$$

Finally, the association between *VOTEFOR* and the ERC is mathematically determined by the derivation of the ERC with respect to *VOTEFOR*.

$$\frac{\partial ERC}{\partial VOTEFOR} = \beta_3 \tag{4.4}$$

The empirical outcome of β_3 shown in Table 4.5 is positive (coefficient of 0.0583) and significant (one-tailed p-value of 0.017). Thus, *VOTEFOR* is associated with the ERC. Moreover, the economic relevance is also of interest. Therefore, the relative change of the ERC for an average firm is computed for two cases: (1) a 1 percentage point increase in *VOTEFOR* from its mean (from 98.30 to 99.30) and (2) an increase from the 25^{th} to the 75^{th} percentile of *VOTEFOR* (from 98.02 to 99.53). In the first case, the ERC changes from 0.7401 to 0.7984, an increase of approximately 7.88%. In the latter case, the ERC increases by approximately 12.16%.

Table 4.5: OLS Regression—Results of Auditor Ratification Votes: Earnings-Related Information?

	Dependent Variable = *CAR*		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**
SURP	-3.7006	3.2611	0.257
VOTEFOR	-0.0001	0.0004	0.735
VOTEFOR×SURP	0.0583	0.0276	0.035
SIZE	-0.0004	0.0008	0.591
MB	-0.0001	0.0003	0.705
MBNEG	-0.0138	0.0064	0.032
LEV	0.0110	0.0038	0.004
BETA	-0.0013	0.0022	0.559
SURPNEG	-0.0294	0.0020	0.000
ANALYST	0.0000	0.0022	0.998
SIZE×SURP	0.0097	0.0836	0.907
MB×SURP	0.0164	0.0229	0.474
MBNEG×SURP	0.4688	0.4088	0.252
LEV×SURP	-1.2222	0.3276	0.000
BETA×SURP	0.1493	0.1795	0.406
SURPNEG×SURP	-0.4517	0.2270	0.047
ANALYST×SURP	0.2803	0.2467	0.256
Intercept	0.0377	0.0453	0.406
Industry Effects:		Yes	
Year Effects:		Yes	
Clustered by:		Firm	
n		6,621	
Adjusted R^2		0.073	
$Prob > F$		0.000	

Note: This table presents the results of the cross-sectional OLS regression based on the pooled data. The regression model includes industry and year fixed effects, and standard errors are clustered by firm. The regression model also includes a set of interactions between *SURP* and the industry and year dummies that are omitted from the table. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The reported p-values are two-tailed. The following regression model is tested to provide evidence regarding *H1*: $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} + \sum_{j=4}^{10} \beta_j CONTROL_{it} + \sum_{j=11}^{17} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=18}^{25} \beta_j IND_{it} + \sum_{j=26}^{33} \beta_j IND_{it} \times SURP_{it} + \sum_{j=34}^{36} \beta_j YEAR_{it} + \sum_{j=37}^{39} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, ANALYST_{it}\}$. *IND* is a set of eight industry dummies, and *YEAR* represents three year dummies. The variables are as defined in Table 4.1.

At first glance, these figures may seem too high and may be put into perspective when looking at the cumulative abnormal stock return. Thus, for the first case, the *CAR* for an average firm with a positive earnings surprise in the amount of the mean absolute *SURP* increases by approximately 1% and the stock price increases by approximately 1 cent, which is quite respectable if one considers the small changes in the results of auditor ratification votes (cf. Collins and Kothari 1989).[41]

This result shows that there is an association between *VOTEFOR* and the ERC. In other words, an increased market response to earnings surprises occurs because shareholders rely more heavily on reported information when votes for (supporting) auditor ratifications are higher. Accordingly, there appears to be evidence that shareholders' satisfaction with auditor selection allows inferences regarding shareholders' assessment of earnings quality. This finding implies that the results of auditor ratification votes contain important earnings-related information, and therefore, complements the study of Tanyi and Roland (2017).

4.4.2.2 Results of Auditor Ratification Votes and Information Asymmetries between Managers and Shareholders

The same procedure—i.e., derivatives of Equation 4.2 with respect to *SURP*, *VOTEFOR*, and finally, the proxy for *IA*—is also used to analyze *H2*: Do different levels of information asymmetry influence the association in *H1*?[42] For the purpose of investigating the effect of *TSH* on *H1*, β_4 of the regression in Table 4.6, column (1) is examined (coefficient of -0.3370). The non-existence of the hypothesized association can be rejected at a 1% significance level (one-tailed p-value of 0.009). In light of higher levels of information asymmetry, this finding provides evidence that the results of auditor ratification votes are of particular interest for firms characterized by higher levels of dispersed ownership.

[41] This is based on a mean stock price 2 trading days before the earnings announcement date that is used to scale *SURP* of $32.61, a mean absolute *CAR* of 4.89%, and a mean absolute *SURP* of 0.006, resulting in the following calculation: $\frac{0.0583 \times 0.006}{0.0489} \approx 1\%$ or $0.0583 \times 0.006 \times 32.61 \approx 1$ cent, respectively.

[42] To capture the relation of *VOTEFOR* and the ERC (*H1*), the derivation of Equation 4.2 must be considered: $\frac{(\partial CAR/\partial SURP)}{\partial VOTEFOR} = \beta_3 + \beta_4 IA$. Here, the association between *VOTEFOR* and the ERC depends, in addition, on the proxy for *IA*. The two coefficients (β_3, β_4) for each proxy are jointly different from zero ($Prob > F$ of 0.041 in the *TSH* model and 0.006 in the *DOAF* model), and the calculation of the marginal effect of *VOTEFOR* on the ERC for an average firm results in values of 0.0355 in the *TSH* regression and 0.0356 in the *DOAF* regression.

Table 4.6: OLS Regressions—Results of Auditor Ratification Votes and Information Asymmetries between Managers and Shareholders

	Dependent Variable = *CAR*					
	Information Asymmetry Proxy: *TSH* (1)			Information Asymmetry Proxy: *DOAF* (2)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
SURP	-7.8636	4.2904	0.067	-0.1133	3.5863	0.975
VOTEFOR	0.0000	0.0006	0.967	0.0001	0.0004	0.831
VOTEFOR×*SURP*	0.1011	0.0394	0.010	0.0189	0.0322	0.558
VOTEFOR×*IA*×*SURP*	-0.3370	0.1433	0.019	0.2085	0.0950	0.028
IA	0.1265	0.3056	0.679	0.1774	0.1539	0.249
VOTEFOR×*IA*	-0.0013	0.0031	0.674	-0.0018	0.0016	0.256
IA×*SURP*	34.6248	13.9619	0.013	-20.5963	9.2707	0.026
Control Variables:	Yes			Yes		
Intercept:	Yes			Yes		
Industry Effects:	Yes			Yes		
Year Effects:	Yes			Yes		
Clustered by:	Firm			Firm		
n	6,621			6,621		
Adjusted R^2	0.075			0.074		
$Prob > F$	0.000			0.000		

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. The regression models also include a set of interactions between *SURP* and the control variables, industry, and year dummies that are omitted from the table. All continuous variables are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested to provide evidence regarding *H2*: $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} + \beta_4 VOTEFOR_{it} \times IA_{it} \times SURP_{it} + \beta_5 IA_{it} + \beta_6 VOTEFOR_{it} \times IA_{it} + \beta_7 IA_{it} \times SURP_{it} + \sum_{j=8}^{14} \beta_j CONTROL_{it} + \sum_{j=15}^{21} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=22}^{29} \beta_j IND_{it} + \sum_{j=30}^{37} \beta_j IND_{it} \times SURP_{it} + \sum_{j=38}^{40} \beta_j YEAR_{it} + \sum_{j=41}^{43} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$, where $CONTROL_{it} = \{SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, ANALYST_{it}\}$. *IA* represents two different proxies for information asymmetries between managers and shareholders: column (1) *TSH* and column (2) *DOAF*. *IND* is a set of eight industry dummies, and *YEAR* represents three year dummies. The variables are as defined in Table 4.1.

In addition to the influence of the ownership structure, *DOAF*—a measure of information asymmetries due to variances in the informativeness of firms' disclosure policies—is examined. Analyzing the data in Table 4.6, column (2) shows that the coefficient of $VOTEFOR \times DOAF \times SURP$ is positive (0.2085) and significantly different from zero (one-tailed p-value of 0.014). This result also indicates that higher levels of information asymmetry—represented by larger standard deviations of analysts' forecasts—are accompanied by a greater importance of the results of auditor ratification votes.

In summary, the results of auditor ratification votes are associated with the decision-usefulness of reported earnings. Thus, shareholders' satisfaction with auditor selection could be regarded as earnings-related information, and its disclosure seems to represent a signal to the market. Moreover, the observed association appears to be positively influenced by higher levels of information asymmetry between managers and shareholders; in other words, the results of auditor ratification votes as a signal of shareholders' perceptions of earnings quality might be of particular interest for firms characterized by higher levels of dispersed ownership and disagreement among analysts. Since high earnings quality is crucial to mitigating agency costs by reducing information asymmetries, the fact that these information asymmetries have a moderating effect on the association observed in *H1* might corroborate the view that earnings quality is what matters to shareholders and is captured by their satisfaction with auditor selection expressed in auditor ratification votes.

4.5 Additional Analyses

4.5.1 Measurement of Shareholders' Satisfaction with Auditor Selection

This section presents additional analyses to check the robustness of the findings and to obtain confidence in the stated conclusions. For the sake of brevity, the results are not tabulated in this section, with a few exceptions. To ensure that the findings of this study are not driven by the specific measurement of shareholders' satisfaction with auditor selection, the regressions are re-estimated using different specifications of the experimental variable. First, the percentage of votes against auditor ratification is used to proxy shareholders' (dis)satisfaction with auditor selection (Raghunandan 2003). Second, the variable of interest is defined as percentage of votes against or abstaining from auditor ratification (Mishra et al. 2005; Raghunandan 2003; Raghunandan and Rama 2003; Sainty et al. 2002). Third, a logarithm transformation of *VOTEFOR* is implemented to address the high skewness of the voting outcome (Dao et al. 2008; Hermanson et al. 2009). In all three cases, the stated conclusions remain the same.

Additionally, two further specifications of the measure of shareholders' satisfaction with auditor selection are tested. On the one hand, a variable indicating whether the percentage of votes supporting auditor ratification is above the mean observation is generated and included in the model instead of *VOTEFOR*. The results remain unchanged except for the three-way interaction of $VOTEFOR \times DOAF \times SURP$ which is not significantly different from zero. On the other hand, *VOTEFOR* is replaced by a variable that divides the results of auditor ratification votes into different groups (less than 90, and more than 91, 92, 93, 94, 95, 96, 97, 98, and 99% of votes supporting auditor ratification). The findings of the main analyses are not altered.

4.5.2 Measurement of Perceived Earnings Quality

To check the robustness of the ERC model, all regressions are re-estimated by using alternative calculations of *CAR*. Qualitatively similar results are found when *CAR* is summed over other event windows, i.e., -2 to +2 and -3 to +3 trading days relative to the earnings announcement date. However, for the -3 to +3 window, the three-way interaction of $VOTEFOR \times DOAF \times SURP$ is merely at the edge of significance (one-tailed p-value of 0.105). Further, the empirical evidence is insensitive to the selected market return index (Standard and Poor's 500 Composite versus the Dow Jones Industrial Average). The same applies when the respective variables refer to

median analysts' earnings forecasts rather than mean analysts' earnings forecasts. To prevent outlier problems, first, *SURP* is truncated at the 1% and 99% levels, and second, a robust regression (weighting down estimates with large absolute residuals) is estimated. Finally, it is controlled for a non-linear relation between *SURP* and *CAR*, and following prior research (Subramanyam 1996; Wilson 2008), an interaction between *SURP* and the absolute value of *SURP* is included in the regressions. Furthermore, a loss indicator and its interaction with *SURP* are added to the model (Chen et al. 2014). In all cases, the results remain qualitatively unchanged.

4.5.3 Alternative Model Specifications

In addition to the alternative measurement of the variable of interest and the dependent variable, further changes are to be made to the model to gain an impression of the sensitivity of these study's findings.

First of all, *TSH* and *DOAF* are included in Equation 4.1 as control variables since they are introduced in Equation 4.2; the results regarding *H1* are qualitatively unchanged. To control for outliers, all continuous variables in the main analyses are winsorized. If non-winsorized data are used or if only the dependent variable is winsorized (Dyckman and Zeff 2014), significant results for the regression of *H2* using the proxy *TSH* are observable. However, the regression results are robust if all independent variables are winsorized but not the dependent variable. Besides, yearly winsorization of the continuous variables and winsorization at the 2.5^{th} and 97.5^{th} percentiles do not alter the results.

Furthermore, the industry fixed effects are based on the SIC Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration. The set of industry dummies in the main model is replaced by a set of SIC dummies introduced by Frankel et al. (2002), two-digit SIC dummies, one-digit SIC dummies, and an indicator variable equal to 1 for industries characterized by a high exposure to litigation risk, and 0 otherwise (Rogers and Stocken 2005; Shu 2000). In the first two cases, the results are nearly the same except for the three-way interaction of $VOTEFOR \times TSH \times SURP$ regarding *H2*—its one-tailed p-values equal around 0.15. In the other cases, and if omitting industry fixed effects, all results are qualitatively similar.

Besides, year-quarter fixed instead of year fixed effects are included to take the seasonality in stock returns into consideration (Rozeff and Kinney 1976). In addition, it is controlled for potential time-invariant endogeneity (Chenhall and Moers

2007; Roberts and Whited 2013), and—except for *DOAF*—including firm fixed effects does not alter the stated conclusions. In the presented tables, standard errors are clustered by firm which accounts for the correlation of standard errors within the firm. If one also assumes correlation across firms, two-way clustering by firm and time would be more appropriate (Gow et al. 2010). Nevertheless, the findings are unchanged if standard errors are two-way clustered. Finally, the results remain robust using the bootstrapping method for resampling to receive bootstrap standard errors.[43]

4.5.4 Cases of Very High Voting Dissent on Auditor Ratification

It might be the case that the results in Table 4.5 and Table 4.6 are driven by observations with very high dissenting votes on auditor ratification. To determine whether this is the case, the quartile of the sample's lowest auditor ratification voting results is dropped. The results are qualitatively unchanged except for the three-way interaction of *DOAF*, and it can be concluded that the results are robust to accounting for very high voting dissent on auditor ratification. Thus, even if shareholders' dissatisfaction with auditor selection is moderate, it seems that differences in the voting results still provide information regarding shareholders' perceptions of earnings quality.

4.5.5 Incremental Information of the Results of Auditor Ratification Votes Beyond Other Audit-Related Information

It might be argued that the results of auditor ratification votes are "timely stale information" and that other information regarding the company's auditor is already publicly available. Thus, even if one follows the reasoning presented above, it remains questionable whether the results of auditor ratification votes capture only other audit-related information or if it provides incremental information beyond that contained in other audit-related information disclosures (Biddle et al. 1995;

[43] Bootstrapping is the most common resampling method. This approach would also provide correct standard errors for data that are not normally distributed (Deis and Hill 1998; Marais 1984). A number of 1,000 bootstrap replications is chosen and should provide reliable standard errors (Wooldridge 2016).

Hoskin et al. 1986). Therefore, the regression models include three additional variables, which represent publicly available information on audit-related issues.[44]

First, it is controlled for the effect of auditor industry specialization—measured by an indicator variable equal to 1 if the firm's auditor is the national annual audit fee market share leader in the firm's industry, and 0 otherwise (*INDLEADER*)—because there is evidence that the reliability of audited, reported earnings is perceived to be higher if the auditor is an industry specialist (Balsam et al. 2003).[45] Second, research has also shown that the ratio of non-audit to audit fees (*NAFAF*) is associated with shareholders' perceptions of audit quality and, eventually, earnings quality (Eilifsen and Knivsfla 2013; Francis and Ke 2006; Higgs and Skantz 2006; Krishnan and Ye 2005; Lim and Tan 2008). Third, if the firm changes its auditor—measured by an indicator variable called *AUDCH* that is equal to 1 if the firm changed the auditor, and 0 otherwise—shareholders' perceptions of audited, reported earnings could also change because the audit market is differentiated and different audit firms supply different audit quality (Wei et al. 2015).

The regression result in Table 4.7, column (1) still supports *H1*. Even if it is controlled for further audit-related variables, *VOTEFOR* is associated with the ERC (coefficient of 0.0574, one-tailed p-value of 0.020), which implies that the disclosure of the results of auditor ratification votes provides incremental information beyond that included in other publicly available audit-related information.

Examining the variables *INDLEADER*, *NAFAF*, and *AUDCH* shows an interesting picture. The interactions with *SURP* and, hence, their effects on the ERC are not significantly different from zero, which is not in conformity with the coefficients' predictions. Nevertheless, the finding for *INDLEADER* is in line with prior research (Francis et al. 1999; Wallman 1996) arguing that audit research at the office-level is more appropriate in this context, and Krishnan et al. (2013) demonstrate that shareholders' positive perceptions of auditor industry expertise exist primarily for city-only or joint city-national industry leaders. Another explanation might be that identifying auditor industry specialization could be costly for an

[44] In this and the following subsection, the results of modified regressions of *H1* are presented and discussed. However, also the regressions to test *H2* are re-estimated with the variables introduced in both subsections. All stated conclusions are qualitatively unchanged and, therefore, not tabulated.

[45] Of all firm observations, 86.81% are audited by a Big 4 auditor, and every identified market share leader in an industry belongs to one of the Big 4. Hence, an indicator variable referring to Big 4 auditors is not included in the regression. However, a regression with a Big 4 indicator instead of *INDLEADER* is performed; the Big 4 indicator is not significantly different from zero. Besides, the following subsection takes a separate look at a subsample of Big 4 clients.

average shareholder (Wei et al. 2015), and thus, it is not related to reported earnings' decision-usefulness.[46] Furthermore, *NAFAF* could also be of limited usefulness for an average shareholder, who is unaware of regulatory details concerning fee disclosure. Dickins and Higgs (2005) note that due to inconsistent and insufficient disclosures among firms, the information is useful only if a shareholder has a deeper understanding of the fee composition, which could at least be questionable for the average shareholder. This might also partly explain the non-significant results of Ghosh et al. (2009).[47]

To conclude, even if it is controlled for further audit-related variables, *VOTEFOR* is associated with the ERC, which implies that shareholders' satisfaction with auditor selection is incrementally informative regarding perceived earnings quality beyond other publicly available audit-related information. Hence, there is empirical support that *VOTEFOR* captures shareholders' perceptions of further firm and auditor characteristics that influence their assessment of earnings quality in addition to those proxied by *INDLEADER*, *NAFAF*, and *AUDCH*.

[46] The recent study of Audousset-Coulier et al. (2016) casts doubt on the validity of auditor industry specialization measures, which includes this study's measure.

[47] The empirical evidence might also be explained by potential issues of "constructed collinearity" due to the relatively large number of interactions in the ERC regression. As this statistical problem cannot be completely ruled out, the empirical findings (i.e., the non-significance of other audit-related variables) should be interpreted with caution.

Table 4.7: OLS Regressions—Audit-Related Variables and Big 4 Sample

	Dependent Variable = *CAR*					
	Audit-Related Variables (1)			Big 4 Sample (2)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
SURP	-3.6487	3.2499	0.262	-2.7950	3.5547	0.432
VOTEFOR	-0.0001	0.0004	0.767	-0.0003	0.0004	0.487
VOTEFOR×*SURP*	0.0574	0.2794	0.040	0.0629	0.0342	0.066
INDLEADER	-0.0011	0.0020	0.575			
INDLEADER×*SURP*	0.1561	0.2256	0.489			
NAFAF	0.0002	0.0031	0.946			
NAFAF×*SURP*	-0.0196	0.3579	0.956			
AUDCH	-0.0068	0.0083	0.414			
AUDCH×*SURP*	0.1133	0.7141	0.874			
Control Variables:	Yes			Yes		
Intercept:	Yes			Yes		
Auditor Effects:	No			Yes		
Industry Effects:	Yes			Yes		
Year Effects:	Yes			Yes		
Clustered by:	Firm			Firm		
n	6,621			5,748		
Adjusted R^2	0.072			0.072		
$Prob > F$	0.000			0.000		

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. The regression models also include a set of interactions between *SURP* and the control variables, industry, and year dummies that are omitted from the table. In addition, the regression model in column (2) includes auditor fixed effects and the corresponding interaction terms with *SURP*. All continuous variables are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested to provide evidence regarding *H1*: column (1) $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} + \beta_4 INDLEADER_{it} + \beta_5 INDLEADER_{it} \times SURP_{it} + \beta_6 NAFAF_{it} + \beta_7 NAFAF_{it} \times SURP_{it} + \beta_8 AUDCH_{it} + \beta_9 AUDCH_{it} \times SURP_{it} + \sum_{j=10}^{16} \beta_j CONTROL_{it} + \sum_{j=17}^{23} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=24}^{31} \beta_j IND_{it} + \sum_{j=32}^{39} \beta_j IND_{it} \times SURP_{it} + \sum_{j=40}^{42} \beta_j YEAR_{it} + \sum_{j=43}^{45} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$ and column (2) $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 VOTEFOR_{it} + \beta_3 VOTEFOR_{it} \times SURP_{it} + \sum_{j=4}^{10} \beta_j CONTROL_{it} + \sum_{j=11}^{17} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=18}^{20} \beta_j AUD_{it} + \sum_{j=21}^{23} \beta_j AUD_{it} \times SURP_{it} + \sum_{j=24}^{31} \beta_j IND_{it} + \sum_{j=32}^{39} \beta_j IND_{it} \times SURP_{it} + \sum_{j=40}^{42} \beta_j YEAR_{it} + \sum_{j=43}^{45} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, ANALYST_{it}\}$. *AUD* is a set of three auditor dummies, *IND* is a set of eight industry dummies, and *YEAR* represents three year dummies. The variables are as defined in Table 4.1.

4.5.6 Analysis of Auditor Ratification Votes of Big 4 Auditors

The audit literature has shown that Big 4 auditors differ from non-Big 4 auditors (DeFond et al. 2017). In particular, Big 4 auditors have incentives to provide higher audit quality which is based on the litigation and reputation rational (DeAngelo 1981b; Dye 1993). In the context of this study, one might argue that shareholders are always—and possibly only—satisfied if the management hires a Big 4 audit firm. In line with this notion, Sainty et al. (2002) provide evidence that Big 4 auditors receive a higher percentage of votes supporting auditor ratification.

Therefore, it would be interesting to know whether the findings above are also valid for a sample of exclusively Big 4 clients. Consequently, 873 firm-years of non-Big 4 clients are deleted to avoid brand name effects (Craswell et al. 1995) and possible auditor self-selection biases (Khurana and Raman 2006). Moreover, auditor fixed effects and the corresponding interaction terms with $SURP$ are included to rule out that clients of a single audit firm drive the results.

Despite the sample decrease and loss of statistical power Table 4.7, column (2) shows a positive and significant association of $VOTEFOR \times SURP$ and CAR (coefficient of 0.0629, one-tailed p-value of 0.033). Thus, the study's results are not driven solely by the choice of "high quality" Big 4 auditors since the association between shareholders' satisfaction with auditor selection and perceived earnings quality is also observable within the sample Big 4 clients. This finding represents triangulating evidence for the assertion that the results of auditor ratification votes can be regarded as earnings-related information that might help shareholders to make informed investment decisions.

4.6 Summary and Limitations

At present, shareholder ratification of auditors in the U.S. is frequently a routine, non-binding matter, which may seem surprising because it is one of the very few ways for shareholders to express their views about a company's auditor and, therefore, their satisfaction with auditor selection (Marshall 2005; Sainty et al. 2002). In particular, it should be questioned whether shareholders' satisfaction with auditor selection allows inferences regarding shareholders' assessment of earnings quality. Nevertheless, the SEC (2009) emphasized the importance of the results of auditor ratification by amending the disclosure requirements concerning this shareholder voting result. If one of the SEC's main objectives is to ensure the provision and disclosure of important information to shareholders (SEC 2000a; SEC 2000b; SEC 2003b), this would imply that the results of auditor ratification votes constitute important earnings-related information. However, little is known about shareholders' interests in and perceptions of the auditor ratification process (Wei et al. 2015). Especially, it remains unclear whether the results of auditor ratification votes are informative about shareholders' perceptions of earnings quality and, hence, represent an earnings-related signal to the market.

The empirical evidence presented in this study demonstrates that the results of auditor ratification votes are associated with the decision-usefulness of reported earnings. This finding implies that shareholders' satisfaction with auditor selection might capture shareholders' perceptions of earnings quality. In addition, there are indications that the association between shareholders' satisfaction with auditor selection and perceived earnings quality is intensified by the level of information asymmetry between managers and shareholders. Further analyses show that even if additional audit-related variables are controlled for, the results of auditor ratification votes are still related to the ERC. The evidence hints to the fact that the results of auditor ratification votes provide incremental information regarding perceived earnings quality beyond that contained in other audit-related information.

To summarize, the findings suggest that it seems reasonable to disclose the results of auditor ratification votes, as this study provides empirical evidence that these results are important earnings-related information. Thus, this study corroborates the suggestion of Mayhew (2017, 127) that "there is meaning to auditor ratification votes." Finally, the idea that such shareholder votes are "more than a symbolic act" (Saul 1996, 135) is supported.

Whether it is economically meaningful to regulate this matter—i.e., the implementation of auditor ratification as a mandatory and/or binding agenda item at shareholder meetings (Hermanson et al. 2009; Liu et al. 2009)—is beyond the scope of this study, and further research is required to answer this question. Additionally, the vast majority of listed firms—94% of Standard and Poor's 500 in 2006 (ACAP 2008) and more than 90% of the Russel 3000 between 2009 and 2012 (Cunningham 2017)—seek shareholder ratification of auditors; however, the results are constrained to these firms. As demonstrated in prior research, these firms may differ from those that do not seek such votes (Dao et al. 2012; Krishnan et al. 2005; Mayhew and Pike 2004). Future research could address whether shareholders' perceptions of earnings quality differ for firms with shareholder ratification relative to those firms that do not implement any shareholder ratification of auditors and how possible differences could be explained.

Although the results are largely robust, further limitations are worth mentioning. The ERC framework is used to examining shareholders' perceptions.[48] Even if the adjusted R^2 values are relatively high compared with those of prior research (Francis and Ke 2006; Higgs and Skantz 2006; Krishnan and Ye 2005; Lev 1989), returns-earnings regressions are apparently associated with an omitted variable problem (Balsam et al. 2003; Dechow et al. 2010). Besides, the confidence in the result of an event study depends, on the one hand, on the information efficiency of the capital market and, on the other hand, on whether the events are spread across the year and whether there are no confounding events (Kothari 2001). The former is covered by the assumption of at least semi-strong information efficiency for the U.S. market (Fama 1998). The latter seems to be plausible at least against the background that the earnings announcement dates of the different companies are dispersed over a considerable period of time. The analysis of quarterly reports could be more problematic in this respect. Moreover, this could further exacerbate the aforementioned big sample bias and lead to problems in the identification strategy. Eventually, auditor ratification refers to the auditor of the annual financial statement, and ultimately, only the annual financial statement is subject to a statutory audit. For this reason, the quarterly reports are not examined, despite their possible advantage of being more timely.

[48] Therefore, this study focuses on equity investors. An approach to examine the perceptions of debt investors might be to measure it via the cost of debt (Mansi et al. 2004). However, the use of this methodology may be debatable (DeFond and Zhang 2014).

Furthermore, there might be situations in which shareholders do not provide the required instructions to their brokers regarding how to vote on this matter, i.e., the cases of broker non-votes. However, such cases of reported broker non-votes concerning shareholder auditor ratification are rare.[49] These cases might be significant for shareholder voting-related research questions, which makes this topic an interesting one to examine in future studies.

Finally, this study primarily establishes an association between shareholders' satisfaction with auditor selection and perceived earnings quality, and the underlying mechanism is not in the foreground. Accordingly, it is beyond the scope of this study to make any statements regarding a causal relation. However, there is evidence that the results of auditor ratification votes provide an indicator of shareholders' perceptions of earnings quality. Even if the votes are informative beyond other auditor-related information, it might be questionable whether they are also informative beyond further corporate governance factors or other voting results. Even if this question is not directly examined due to a lack of data,[50] the robust results of the firm fixed effects model support this notion if one assumes that the firms' corporate governance factors are time-invariant.[51] Moreover, including results of other votes at the annual general meeting could lead to serious problems of collinearity and endogeneity. Ultimately, even if no causal link can be established, the results of this study indicate that shareholders' satisfaction with auditor selection is related to earnings quality and appears to matter.

[49] In the sample, 161 out of 6,621 firm-years report a value for broker non-votes.
[50] However, firm size, which should be related to corporate governance, is included in the model.
[51] The results could also partially invalidate the previously mentioned omitted variable problem.

5 Economic Importance of the Client: Do Shareholders Care about Earnings Quality?[52]

> *"The objective of the ordinary audit of financial statements by the independent auditor is the expression of an opinion on the fairness with which they present, in all material respects, financial position, results of operations, and its cash flows in conformity with generally accepted accounting principles."*

The findings of the previous chapter support the notion that the results of auditor ratification votes are informative about shareholders' perceptions of earnings quality and, hence, represent important earnings-related information. This also might imply, that shareholders deal with earnings quality and consider their vote on the ratification of the selected auditor thoroughly. As can be seen from the above quotation from the Auditing Standards of the Public Company Accounting Oversight Board (PCAOB), the auditor plays an important role in ensuring high earnings quality (PCAOB 2017, AS.1001). In particular, the auditor serves as a monitoring instrument providing assurance about the faithfulness of the financial statements. However, this assurance function to alleviate the agency problem can only be fulfilled successfully by an independent auditor. The importance of the auditor's independence is also illustrated by the direct reference in the first sentence of the General Auditing Standards on the "General Principles and Responsibilities" cited above. The meaning of independence is reinforced by the second auditing standard, which explicitly deals with the topic of independence and contains the following quote (PCAOB 2017, AS.1005):

[52] This chapter is based on a working paper titled "Economic Importance of the Client: When Do Shareholders Care about Auditor Independence?", which is co-authored by Jacob Justus Leidner. It was presented at the *26th Audit & Assurance Conference of the British Accounting & Finance Association* in Oxford, the *39th European Accounting Association Annual Congress* in Maastricht, the *78. Wissenschaftliche Jahrestagung des Verbandes der Hochschullehrer für Betriebswirtschaft* in Munich, the *2016 American Accounting Association Annual Meeting* in New York, the *2017 American Accounting Association Auditing Section Midyear Meeting* in Orlando, and the *9th European Auditing Research Network Symposium* in Leuven. The reasoning, results, and interpretations of this study might change after the submission and publication of this doctoral thesis. The recent version of the paper is available upon request.

"In all matters relating to the assignment, an independence in mental attitude is to be maintained by the auditor or auditors."

However, the standard not only deals with independence in fact but also, and maybe more importantly, independence in appearance. Eventually, shareholders in particular are interested in an independent auditor, who—according to the PCAOB (2017, AS.1005)—is "free from any obligation to or interest in the client." By implication, a threat to auditor independence should cause concern among shareholders. The confidence of shareholders and thus perceived auditor independence were sustainably damaged by the accounting scandals surrounding Enron and WorldCom at the beginning of the millennium (Fearnley et al. 2005; Krishnamurthy et al. 2006; Largay 2002). In response, SOX was adopted in 2002 with the aim of regaining the trust of shareholders by strengthening corporate governance. At the same time, an attempt was made to ensure the auditor's independence by, among other things, restricting non-audit services (DeFond and Francis 2005).

In her seminal paper, DeAngelo (1981a) shows that auditor independence could be threatened due to the economic bond between the auditor and the client. This threat to independence could prevent the auditor from reporting a mistake despite the ability to detect it. The consequence would be an insufficient audit quality and a failure of the assurance function of auditing. In turn, this would lead to lower earnings quality and thus higher agency costs, which should be negatively acknowledged by shareholders. On the other hand, according to DeAngelo (1981b), there are incentives based on the reputation rational for auditors to maintain their independence. Thus, the remaining clients—or more precisely, the expected future quasi-rents of these clients—of an auditor serve as collateral (DeAngelo 1981b).[53] A substantial implication resulting from this finding is that larger auditors—assuming constant client-specific quasi-rents—are, per se, more independent than smaller auditors: for large auditors, the potential costs of losing one client as a consequence of maintaining independence are less significant than the expected costs from losing (a portion of) the collateral that serves as a bond against opportunistic behavior. Accordingly, the greater the auditor's size, the smaller the probability that the auditor will give up independence.

However, this consideration focuses exclusively on the auditor. What about the independence of an auditor—regardless of auditor size—from an economically im-

[53] However, regardless of whether the quasi-rents of all clients are identical, the average proportion of the total quasi-rents of one client is smaller for larger auditors.

portant client who represents a significant portion of the auditor's future quasi-rents? In addition, one could break down this question to the audit office-level, since contracts with clients and decisions are considered to be made at the office-level (Reynolds and Francis 2000; Wallman 1996). The economic dependence hypothesis assumes that auditor independence is threatened for clients accounting for a larger share of an auditor's or an audit office's future quasi-rents (DeAngelo 1981b; Reynolds and Francis 2000). However, this does not take into account the increased probability of losing other clients if a scandal concerning an economically important client becomes public (Lys and Watts 1994; Stice 1991). Accordingly, this is an interesting research topic that has become even more relevant in the context of SOX.[54]

Beyond auditor independence in fact, which—despite partly mixed evidence—does not seem to be endangered by the economic importance of the client, shareholders' perceptions regarding this issue should be of particular importance. After all, shareholders make investment decisions in the capital market and are responsible for efficient capital allocation. Logically, the PCAOB (2017, AS.1005) mentions in its General Auditing Standards:

> *"Likewise, an auditor with a substantial financial interest in a company might be unbiased in expressing the opinion on the financial statements of the company, but the public would be reluctant to believe that he was unbiased. Independent auditors should not only be independent in fact; they should avoid situations that may lead outsiders to doubt their independence."*

Therefore, it is of utmost economic relevance to know whether shareholders (still) care about the auditor independence and, thus, earnings quality of economic important clients. This question is addressed in this study, which examines a Big 4 client sample in the U.S. ten years after the implementation of SOX. Thereby, the study focuses on shareholders' perceptions of the independence issues caused by the economic importance of the client at the audit office-level.

In the context of such a research question, however, it is essential not to group all companies, but to pursue a differentiated approach. Thus, Gaynor et al. (2016, 15) note that earnings quality might depend to a large extent on client's circumstances

[54] SOX is generally regarded as a mere political sign with limited economic impact (Ball 2009; DeFond and Francis 2005; Hart 2009; Li et al. 2008).

and raise the following question in their literature review: "To what extent do changing and differing economic situations affect [...] investors' perceptions of audit quality?" One obvious reason why shareholders' concerns regarding economic importance could vary across firms is differences in the financial condition of the clients. Supporting this argument, a chief financial officer interviewed by Dichev et al. (2013, 27) opines that "the market is more likely to ask questions about earnings quality when the firm is not doing well."

Consequently, the focus of this study is not only on whether shareholders have a negative perception of the economic importance of the client, but rather on whether the economic dependence hypothesis applies irrespective of the client's financial condition. A gain of knowledge in this area should matter and be informative for understanding shareholders' opinions regarding auditor independence. This analysis could also help to explain the mixed evidence in many areas of accounting and auditing research (e.g., auditor industry specialization). Thus, this study is also intended to provide important guidance for future differentiated research on earnings quality.

5.1 Introduction

Shareholders are one of the primary users of audited financial statements (Khurana and Raman 2006; Lev and Ohlson 1982). Shareholders' perceptions of the credibility of those financial statements—i.e., earnings quality—depend on their perceptions of the auditor's independence. Thus, it is unsurprising that the SEC has repeatedly noted that audit-related disclosures are meaningful for shareholders in determining auditor's independence and aid shareholders in making their investment decisions (SEC 2000a; SEC 2000b; SEC 2003b). For instance, disclosures enable shareholders to reach an informed opinion regarding an auditor's economic dependence on a client. The related theory—referred to as the economic dependence hypothesis—suggests that the economic importance of the client might be a reason for threatened auditor independence due to an existing economic bond caused by client-specific quasi-rents (DeAngelo 1981a; DeFond and Zhang 2014; Reynolds and Francis 2000). Consequently, if information regarding an auditor's client dependence is of interest to shareholders, client dependence should influence shareholders' perceptions of earnings quality. Indeed, a few studies provide evidence that auditor independence is perceived to be jeopardized (Ghosh et al. 2009; Khurana and Raman 2006; Lim and Tan 2008). However, the circumstances under which shareholders are concerned about an auditor's economic dependence on the client remain unclear. One reason that shareholders' interest in auditor independence may differ across firms is the variation across firms' financial conditions. Research has demonstrated that the firm's financial condition is, for instance, related to errors in financial statements (Kreutzfeldt and Wallace 1986), restatements (Kinney and McDaniel 1989), or the likelihood of lawsuits against auditors (DeFond et al. 2018; Stice 1991). Thus, this study's focus is not merely on whether shareholders perceive client importance to be negative, but also and more importantly, on whether those perceptions exist irrespective of the client's financial condition.

Based on a sample of 6,018 firm-years of 10-K filers audited by a Big 4 auditor (2010 through 2014), this study reveals that shareholders' perceptions of earnings quality and, hence, of audit quality and auditor independence are negatively associated with the auditor's economic dependence on the client measured at the audit office-level. This finding holds regardless of whether shareholders' perceptions are proxied by the ERC or the ex ante cost of equity capital. More critical, sharehold-

ers seem to perceive a strong auditor-client economic bond as a threat to auditor independence, especially for firms that are more likely to be financially distressed. Additional analyses demonstrate that these findings are quite robust to different approaches to measuring perceived earnings quality and the financial condition of the client. Further results derived from a model dividing the measure of the economic importance of the client into two components—i.e., audit and non-audit fees—mainly suggest that the audit fee component appears to be driving shareholders' perceptions of jeopardized independence.

This study contributes to the auditor independence literature focusing on the association of an auditor's economic dependence on the client with shareholders' perceptions of earnings quality. This analysis provides supporting evidence for the economic dependence hypothesis; client importance measured at the audit office-level is negatively related to the decision-usefulness of earnings and positively associated with the ex ante cost of equity capital—especially for clients in relatively poor financial condition—given the current U.S. context. This could be interpreted as indicating that shareholders might pay particular attention to auditor independence issues due to client dependence if a firm is not in good financial shape. Furthermore, Hollingsworth and Li (2012) suggest that SOX partly mitigated shareholders' concerns regarding an auditor's economic dependence on the client. This study completes the picture by showing that even several years after the implementation of SOX, client fee dependence remains an issue (Kao et al. 2014), at least for firms in poor financial condition. In conclusion, this study shows that shareholders' concerns regarding auditor independence might be conditional on the client's circumstances—such as the client's financial condition. This suggestive analysis provides initial insights into this complex subject. Therefore, it might be of interest to identify other client attributes that could influence shareholders' perceptions of audit-related issues, and further broad evidence on this topic could also assist in better targeting future regulations.

The remainder of this part of the doctoral thesis is organized as follows: In the next section, the related literature is outlined, and hypotheses are developed. Section 5.3 describes the research design and the sample selection process. Section 5.4 presents the model specifications, the descriptive statistics, and the multivariate results. Section 5.5 contains several additional analyses. Finally, section 5.6 concludes the chapter with a brief summary and a discussion of the study's limitations.

5.2 Hypotheses Development

5.2.1 Economic Importance of the Client and Perceived Earnings Quality

Attempts to define audit quality often refer to the seminal work of DeAngelo (1981b), in which she suggests that audit quality is a market assessment of an auditor's expertise and independence. Auditor independence is described by DeAngelo (1981a, 116) as "the conditional probability that, given a breach has been discovered, the auditor will report the breach." Auditor independence—which has a direct impact on audit quality—is compromised if the audit opinion does not coincide with the auditor's findings and beliefs (Magee and Tseng 1990). Since the objective of external audits is to safeguard the credibility of financial statements, threatened auditor independence has a negative impact on earnings quality. Nevertheless, auditors might also have incentives to maintain their independence in that they wish to protect their reputation and avoid litigation exposure (Bonner et al. 1998; DeAngelo 1981b; Dye 1993; Lys and Watts 1994; Palmrose 1988; Watts and Zimmerman 1983).[55]

DeFond and Zhang (2014) note that threats to audit quality are generally characterized by conflicting goals between an auditor's expertise and independence. One possible reason for threatened auditor independence and, hence, impaired earnings quality, is the economic bond between the auditor and the client caused by client-specific quasi-rents resulting from future audit and non-audit fees (Zhang 1999). This economic bond can result in opportunistic behavior by the incumbent auditor, which pursues its own (financial) interests and is interested in maintaining profitable clients. These incentives are assumed to be stronger for those clients that account for a larger share of an auditor's revenues (DeAngelo 1981b; DeFond and Zhang 2014; Gul 1991). Following this reasoning—referred to as the economic dependence hypothesis (Reynolds and Francis 2000)—client importance, defined as the client's share of the auditor's (office's) total revenues, is expected to have an overall negative impact on auditor independence. In this context, the Cohen Report of the American Institute of Certified Public Accountants (AICPA) famously suggested (AICPA 1978, 113): "When one or a few large clients supply a significant portion of the total fees of a public accounting firm, the firm will have greater difficulty in maintaining its independence." However, auditors' concerns regarding the potential loss of reputation as well as litigation risks are supposed to be greater for larger

[55] For a literature review on auditor independence and audit quality, please refer to Tepalagul and Lin (2015).

clients (Lys and Watts 1994; Schmidt 2012; Stice 1991). Since large clients are more visible (Fernando et al. 2010), auditors might have stronger incentives to maintain their independence, which contradicts the reasoning of the economic dependence hypothesis (Reynolds and Francis 2000).

Overall, prior studies provide evidence that actual auditor independence is not compromised for economically important clients (Ashbaugh and Warfield 2003; Chung and Kallapur 2003; DeFond et al. 2002; Gaver and Paterson 2007; Kao et al. 2014; Kinney et al. 2004; Larcker and Richardson 2004; Li 2009; Raghunandan et al. 2003; Reynolds and Francis 2000).[56] However, the economic bond between the auditor and the client might affect not only independence in fact, but also independence in appearance. Moreover, the SEC (2000a) highlights the importance of shareholders' perceptions regarding auditor independence and states: "If investors do not believe that the auditor is truly independent of the issuer, they will derive little confidence from the auditor's opinion and will be far less likely to invest in the issuer's securities. Fostering shareholders' confidence, therefore, requires not only that auditors actually be independent of their audit clients, but also that reasonable investors perceive them to be independent." In turn, shareholders' perceptions about auditor independence determine how useful they consider accounting information.

Therefore, it is quite interesting that—in contrast to independence in fact—several studies show that auditors' independence from economically important clients is perceived to be jeopardized. For instance, high non-audit fee ratios (Francis and Ke 2006; Krishnan and Ye 2005) and a high proportion of client fees to the auditor's total revenues (Ghosh et al. 2009) are negatively related to perceived earnings quality. Higgs and Skantz (2006) find only limited support for such an association but observe a positive association between perceived earnings quality and unexpectedly high audit and total fees. Lim and Tan (2008) show that if an auditor is an industry specialist, it reduces the perceived threat to independence caused by fee dependence. Khurana and Raman (2006) reveal a negative relation between the economic importance of the client and perceived earnings quality. Hollingsworth and Li (2012) support this evidence for financial periods prior to SOX. Their results also indicate that SOX has mitigated shareholders' concerns regarding auditor independence due to client importance issues. However, the study of Ghosh et al. (2009) does not confirm that SOX had an effect. Therefore, these findings might lead one to ques-

[56] Nevertheless, Frankel et al. (2002) reports contradictory results.

tion whether shareholders continue to have a negative perception of the economic importance of the client.[57]

In summary, and despite the weak evidence in studies addressing independence in fact, shareholders' concerns regarding auditor independence are held to increase if the auditor-client economic bond is stronger. Hence, the first hypothesis in its alternative form is stated as follows:

***H1**: The higher the economic importance of the client, the lower the perceived earnings quality.*

5.2.2 Economic Importance of the Client and the Client's Financial Condition

The focus of this study is not only on whether shareholders have a negative perception of client dependence but rather on the circumstances under which shareholders are concerned about the economic bond between the client and the auditor. In particular, this study is interested in whether the economic dependence hypothesis applies irrespective of the client's financial condition, which is one circumstance under which shareholders' interest in auditor independence could vary among clients. Firms under financial pressure might have stronger incentives to engage in "window dressing" to conceal their financial difficulties (DeFond and Jiambalvo 1991; DeFond and Jiambalvo 1994; Kinney and McDaniel 1989). Further, those financially distressed firms may exert greater pressure on the auditor to treat them more favorably because of their financial woes. Thus, one might expect that shareholders perceive client importance to be a particular threat to auditor independence that could lead to lower earnings quality if a firm is financially stressed. In addition, Kreutzfeldt and Wallace (1986) examine the relation between errors in financial statements and environmental factors and find that the probability of an error occurring is higher for firms with greater liquidity difficulties and lower profitability. Restatements are more likely to be disclosed if a firm's financial status is weak (Kinney and McDaniel 1989).

In contrast, research also indicates that the likelihood of lawsuits against an auditor increases with the degree of the client's financial distress because of the greater

[57] An experiment further demonstrates that jurors perceive high client importance as a threat to auditor independence (Brandon and Mueller 2006), which is also indirectly supported by an archival paper (Schmidt 2012).

incentives for claimants to recover their losses from the auditor (Baber et al. 1995; DeFond et al. 2018; Stice 1991). This might also strengthen the auditor's concerns about reputation losses or litigation exposure and, thus, strengthen the auditor's incentives to remain independent. In line with this argument, Reynolds and Francis (2000) state that financially distressed firms pose a higher risk to the auditor. The authors also observe that a stronger auditor-client bond leads to a higher likelihood of issuing conservative going concern opinions, and this effect is driven by the most distressed 25% of the sample (Reynolds and Francis 2000). The results can be interpreted to mean that reputation and litigation concerns dominate the economic dependence hypothesis, and this interpretation is also supported by other studies' outcomes (Gaver and Paterson 2007; Li 2009). Ultimately, it could also be argued that auditor independence might be less likely to be compromised for financially distressed clients since the auditor cannot earn quasi-rents resulting from future fees if the client goes bankrupt. In contrast, the auditor does not want to provoke bankruptcy through the self-fulfilling prophecy effect of a going concern opinion (Carson et al. 2013; Matsumura et al. 1997; Shinde et al. 2013; Vanstraelen 2003). This is likely to apply particularly to clients of economic importance.

Even if there are arguments for why auditor independence might not be compromised by client importance issues for clients in poor financial condition, remember the quote of the chief financial officer interviewed by Dichev et al. (2013, 27) who notes that "the market is more likely to ask questions about earnings quality when the firm is not doing well." Therefore, it remains an open question whether shareholders' concerns regarding the economic bond between the client and the auditor depend on the client's financial condition.[58] To better understand this issue and begin filling this research gap, the second hypothesis in its alternative form is tested:

***H2**: The negative association between the economic importance of the client and perceived earnings quality exists not irrespective of the client's financial condition.*

[58] Only the footnote remark of Krishnan and Ye (2005) indicates that shareholders' concerns regarding non-audit services might be especially present for financially distressed clients. However, Schmidt (2012) is unable to experimentally demonstrate that a firm's financial distress is related to the perceptions of jurors.

5.3 Research Design and Sample Selection

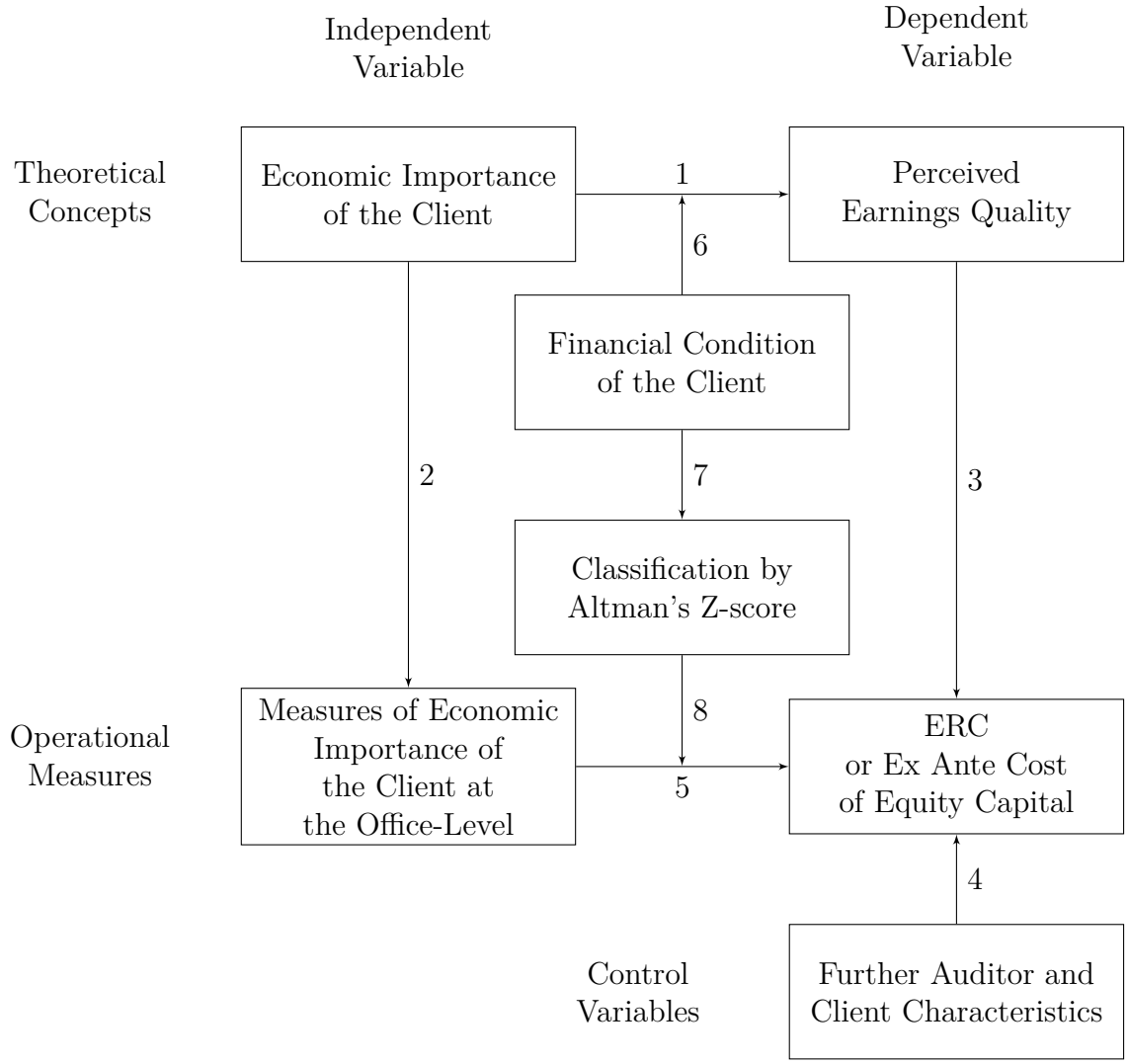
5.3.1 Research Design

5.3.1.1 Conceptual Model

To illustrate the research design, Figure 5.1 presents the conceptual model, which constitutes a modification of the predictive validity model of Kinney and Libby (2002). This study aims to examine whether (link 1; *H1*) and when (link 6; *H2*) the economic importance of the client is associated with perceived threatened auditor independence and, therefore, reduced perceived earnings quality. The concept of perceived earnings quality is used because it can be theoretically and empirically demonstrated that—in addition to an auditor's expertise—an auditor's incentives for independence are related to shareholders' perceptions of earnings quality (DeFond and Zhang 2014; Gaynor et al. 2016). The empirical proxies (link 3) for shareholders' perceptions—ERC and ex ante cost of equity capital—and further control variables affecting the independent and dependent variables (link 4) are introduced in the model specification in the following subsections. First, however, the empirical measure of the economic dependence on the client is discussed (link 2). Based on the empirical evidence of the association between the measure of the economic importance of the client and the ERC or the ex ante cost of equity capital (link 5), the conclusions regarding link 1 are drawn.

Furthermore, the study aims to empirically test (link 8) whether the association hypothesized in *H1* (link 1) exists irrespective of the client's financial condition (link 6, *H2*). Therefore, Altman's Z-score is used to classify the financial condition of the client (link 7).

Figure 5.1: Conceptual Model: Economic Importance of the Client and Perceived Earnings Quality



5.3.1.2 Measure of the Economic Importance of the Client

To test the economic dependence hypothesis, a proxy for the economic importance of the auditor's client is needed. Ideally, client importance is defined as the total quasi-rents of a specific client divided by the total quasi-rents of the auditor. Because quasi-rents are unobservable, an alternative measure of client dependence is required. A reasonable surrogate might be the total fees generated by a specific client relative to the total fees earned from all clients (DeAngelo 1981b; Reynolds and Francis 2000). Prior research has shown that examining the auditor-client economic bond at the audit office-level might be superior to the national-level approach (DeFond and Francis 2005; Francis 2006; Reynolds and Francis 2000; Wallman 1996). Therefore, the measure of client dependence is defined as the total fees paid by the client to the auditor divided by the total fees of the audit office (*IMPORTANCE*).[59]

5.3.1.3 Measure of Client's Financial Condition

To test *H2*, the firm's financial condition must be measured. In this study, the Altman's Z-score is used (Altman 1968), as is common in the accounting and auditing literature, to proxy for the firm's financial distress (Begley et al. 1996; Francis and Yu 2009; Litt et al. 2014; Peterson et al. 2015; Reynolds and Francis 2000; Stice 1991). This measure is chosen not only because it is established in the accounting and auditing literature but also because it provides a categorization of firms' financial condition, which is introduced later. The original calculation of the Altman's Z-score (Altman 1968) is used here, as it targets listed manufacturing firms in contrast to the more recent version in Altman (2000), which is estimated for private firms. This approach also appears reasonable given that the largest industrial group in the sample is the manufacturing industry (cf. Table 5.1, Panel B). Consequently, Altman's Z-score is computed according to the following formula (Altman 1968; Altman 2000):

$$ALTZ_{it} = 1.2\frac{WC_{it}}{TA_{it}} + 1.4\frac{RETEARN_{it}}{TA_{it}} + 3.3\frac{EBIT_{it}}{TA_{it}} + 0.6\frac{MV_{it}}{TL_{it}} + 1.0\frac{SALES_{it}}{TA_{it}}, \tag{5.1}$$

[59] The total fees of an audit office are calculated by summing all fees received from SEC registrants by the auditor in a certain (the audit office's) core-based statistical area (CBSA). To determine the auditor's CBSA, the classification of the U.S. Census Bureau (`https://www.census.gov/programs-surveys/metro-micro.html`; accessed on October 1, 2018) is used.

where *WC* equals working capital, *TA* represents total assets, *RETEARN* stands for retained earnings, *EBIT* denotes earnings before interest and taxes, *MV* corresponds to market value of equity, *TL* equals total liabilities, and *SALES* represents total sales. Subsequently, firms are classified as either financially "safe" or financially "non-safe" to distinguish between financially non-distressed and distressed firms. As previously mentioned, this classification is based on Altman (1968). Technically, the classification is represented by an indicator variable (*ALTZS*) equal to 1 if the Altman's Z-score ranges in the "safe" non-bankrupt zone with values greater than or equal to 2.99, and 0 if the Altman's Z-score ranges in the "gray" area (1.81 to 2.99) or in the bankrupt zone (values below 1.81).

5.3.2 Sample Selection

Table 5.1, Panel A illustrates the sample selection process. The sample's data are obtained from four databases: Audit Analytics, Datastream, I/B/E/S and Worldscope. The initial sample consists of U.S. SEC registrants with audit-related data for the years 2010 through 2014 in Audit Analytics.[60] This initial sample consists of 42,745 firm-year observations, and it is used to compute client importance and auditor industry specialization variables. A total of 23,408 firm-year observations are lost for firms that are not covered by Datastream, I/B/E/S and Worldscope or because inconsistent data are obtained from those databases. As a next step, 4,442 firm-years representing firms in the financial services industry (SIC codes 6000–6799) are deleted. All financial market-related variables are taken from Datastream, and Worldscope is the source of the balance sheet and income statement data. Due to limited data availability, the sample decreases to 13,030 firm-years.

Next, I/B/E/S is used to obtain analyst forecast data. Because I/B/E/S has a large firm bias and the sample must be constrained to firms with non-negative one-year-forward mean analysts' earnings forecasts and non-negative analysts' earnings growth forecasts to calculate the ex ante cost of equity capital, 5,714 firm-years are lost. Subsequently, another 567 firm-years are excluded for the following two reasons. First, eliminating penny stocks should protect the sample against biased return data (i.e., price anomalies; Bhardwaj and Brooks 1992). Second, analysts' earnings forecasts are only employed if at least three analysts' estimates are avail-

[60] The sample period starts in 2010 to avoid results being influenced by both the transition phase for the implementation of SOX as well as the financial crisis (which is assumed to have ended in mid-2009; see `http://www.nber.org/cycles.html`; accessed on October 1, 2018).

able in I/B/E/S. This should ensure that the forecasts approximate market opinion (Barron et al. 2002). Finally, 731 firm-years of non-Big 4 clients are deleted to control for brand name effects (Craswell et al. 1995) and to avoid auditor self-selection bias (Khurana and Raman 2006). Moreover, Ghosh et al. (2009) posit that measures of client importance for the Big 4 are systematically different from those of non-Big 4 firms. The final sample consists of 6,018 firm-year observations from 1,776 different firms. Table 5.1, Panel B illustrates the sample composition by industry. Firms from the manufacturing industry represent the largest part of the sample (45.49%).

Table 5.1: Sample Selection and Sample Composition by Industry

Panel A: Sample Selection

	Firm-Years
Initial sample of U.S. SEC registrants with audit-related data for the fiscal years 2010, 2011, 2012, 2013 or 2014 in Audit Analytics.	42,745
Sample used to compute client importance and auditor industry specialization	**42,745**
Less: Firm-years from firms not covered by Datastream, Worldscope and I/B/E/S, or firm-years with inconsistent data.	23,408
	19,337
Less: Financial firm-years (SIC codes 6000–6799).	4,442
	14,895
Less: Firm-years with a lack of data in Datastream.	1,159
	13,736
Less: Firm-years with a lack of data in Worldscope.	706
	13,030
Less: Firm-years with a lack of data in I/B/E/S, with a negative one-year-forward mean analysts' earnings forecast, or with negative analysts' earnings forecast growth.	5,714
	7,316
Less: Firm-years referring to penny stocks, i.e., the price is less than $1.	9
	7,307
Less: Firm-years with fewer than three analysts following.	558
	6,749
Less: Firm-years with non-Big 4 auditors.	731
Final sample	**6,018**

Panel B: Sample Composition by Industry

SIC	**Division**	**Sample (%)**
100–999	Agriculture, Forestry, And Fishing	0.28
1000–1499	Mining	5.32
1500–1799	Construction	1.83
2000–3999	Manufacturing	45.49
4000–4999	Transportation, Communications, Electric, Gas, And Sanitary Services	12.13
5000–5199	Wholesale Trade	3.84
5200–5999	Retail Trade	10.22
7000–8999	Services	20.89
Total		**100**

Note: This table presents the sample selection procedure (Panel A) and the sample composition by industry (Panel B).

5.4 Model Specifications and Empirical Analyses

5.4.1 Earnings Response Coefficient

5.4.1.1 Earnings Response Coefficient—Model Specification and Control Variables

DeFond and Zhang (2014, 279) interpret high (perceived) audit quality "as greater assurance of high financial reporting quality." Therefore, the objective of an audit is not a self-purpose but is to ensure that the financial report is sufficiently credible. Supporting this, prior studies remark that shareholders' perceptions of earnings quality are influenced by perceived audit quality (Dechow et al. 2010; Eilifsen and Knivsfla 2013; Francis 2004; Li 2009). Theory and empirical evidence demonstrate that market reactions to unexpected earnings depend on shareholders' perceptions of earnings quality, which are reflected in the ERC (Dechow et al. 2010; Holthausen and Verrecchia 1988; Kormendi and Lipe 1987; Lev 1989; Teoh and Wong 1993). Therefore, the well-established ERC metric is used as a measure for perceived earnings quality and, thus, indirectly perceived auditor independence (DeFond and Zhang 2014).[61]

Although the ERC is frequently used in the audit literature (Balsam et al. 2003; Francis and Ke 2006; Higgs and Skantz 2006; Krishnan and Ye 2005; Teoh and Wong 1993), apart from Ghosh et al. (2009), there is little evidence concerning whether shareholders have a negative perception of the economic importance of the client, defined as the proportion of (certain) client fees to the auditor's total revenues.[62] In contrast to Ghosh et al. (2009), this study measures a client's economic importance at the audit office-level and not at the audit firm-level. This might be more appropriate because contracts with clients and decisions are (still) made at the office-level (Craswell et al. 2002; Francis 2006; Francis et al.

[61] Since this study focuses on the independence of the auditor, the short-window market reaction to the disclosure of the audited annual earnings information is examined, as in the study presented in chapter 4. For further information on the relevance and design of the ERC methodology, please refer to section 2.2 and section 4.3.

[62] Further research regarding client importance is presented in the studies of Lim and Tan (2008) and Lim and Tan (2010) analyzing independence in fact and appearance. However, the first study uses non-audit fees and client importance measures at the audit firm-level to examine the impact of industry expertise on the relation between fee dependence and (perceived) auditor independence. The primary focus of the latter is audit tenure considering industry specialization and client importance as moderating effects.

1999; Reynolds and Francis 2000; Wallman 1996).[63] Moreover, this work analyzes whether the client's financial circumstances condition shareholders' perceptions.

To draw conclusions regarding the hypotheses, the following model is tested:

$$\begin{aligned} CAR_{it} = {} & \alpha_0 + \beta_1 SURP_{it} + \beta_2 IMPORTANCE_{it} + \beta_3 IMPORTANCE_{it} \times SURP_{it} \\ & + \sum_{j=4}^{15} \beta_j CONTROL_{it} + \sum_{j=16}^{27} \beta_j CONTROL_{it} \times SURP_{it} \\ & + \sum_{j=28}^{30} \beta_j AUD_{it} + \sum_{j=31}^{33} \beta_j AUD_{it} \times SURP_{it} \\ & + \sum_{j=34}^{40} \beta_j IND_{it} + \sum_{j=41}^{47} \beta_j IND_{it} \times SURP_{it} \\ & + \sum_{j=48}^{51} \beta_j YEAR_{it} + \sum_{j=52}^{55} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}\,, \end{aligned} \tag{5.2}$$

where:

$$\begin{aligned} CONTROL_{it} = \big\{ & SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, \\ & SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, \\ & ANALYST_{it} \big\}. \end{aligned}$$

The variable being explained (CAR) represents the cumulative abnormal stock return over the Russell 3000 return computed for the 3-day window, i.e., -1 trading day to +1 trading day relative to the earnings announcement date.[64] The variable $SURP$ denotes the earnings surprise for the respective fiscal year; it equals the reported earnings per share for the respective fiscal year minus the mean analysts' earnings per share forecast for this fiscal year one week before the earnings announcement date, scaled by the firm's stock price 2 trading days before the earnings announcement date. This variable plays an important role because $SURP$ and its interaction terms determine the ERC. Hence, if one is interested in whether economic dependence on the client is associated with the ERC, one must examine the interaction of the proxy for the economic importance of the client with $SURP$.

[63] Chen et al. (2010) examine client importance at the individual audit partner-level and its effect on audit quality in a Chinese setting.

[64] The calculation is based on the market model estimated over the 180-day window ending 21 trading days before the earnings announcement date. This event window (-1 trading day to +1 trading day) is chosen because it must be sufficiently long to capture the market's price response to earnings' surprises while remaining as short as possible to mitigate the influence of potential confounding events (Bergh and Gibbons 2011; McWilliams and Siegel 1997).

A set of variables (*CONTROL*) is introduced to control for additional auditor and firm characteristics. The model controls for city-level industry specialization (*SPECIAL*) because the results of Krishnan et al. (2013) imply that auditor specialization at the city-level is associated with shareholders' perceptions of earnings quality. To take possible different perceptions of long versus very short auditor-client relationships into account, an indicator variable (*AUDCH*)—equal to 1 if a firm changed its auditor in the respective fiscal year, and 0 otherwise—is included. Furthermore, to guard against possible confounding city effects (DeFond et al. 2018), two indicator variables and a continuous variable are introduced: *SEC* equal to 1 if the client is located in the same CBSA as an SEC office, and 0 otherwise; *PCAOB* equal to 1 if the audit office is located in the same CBSA as a PCAOB office, and 0 otherwise. The natural logarithm of the total population in the audit office's CBSA is represented by the variable *POPULATION*. Additionally, variables control for the following firm characteristics: firm size (*SIZE*; Balsam et al. 2003), growth opportunities (*MB* and *MBNEG*; Higgs and Skantz 2006), capital structure (*LEV*; Baber et al. 2014; Francis and Ke 2006), systematic risk (*BETA*; Collins and Kothari 1989), negative earnings surprises (*SURPNEG*; Basu 1997; Krishnan and Ye 2005) and pre-disclosure environment (*ANALYST*; Teoh and Wong 1993). Finally, *AUD* is a set of three auditor dummies, *IND* is a set of seven industry dummies based on the SIC Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration, and *YEAR* represents four year dummies. Table 5.2 presents the variable definitions.

Table 5.2: Variable Definitions

Variable	Definition
	Dependent Variables
CAR	Cumulative abnormal stock return over the Russell 3000 return computed for the 3-day window, i.e., -1 trading day to +1 trading day relative to the earnings announcement date. The calculation is based on the market model estimated over the 180-day window ending 21 trading days before the earnings announcement date.
COEC	Ex ante cost of equity capital based on the PEG ratio model by Easton (2004).
	Variables of Interest
SURP	Reported earnings per share for the respective fiscal year minus the mean analysts' earnings per share forecast for this fiscal year one week before the earnings announcement date, scaled by the firm's stock price 2 trading days before the earnings announcement date.
IMPORTANCE	Total fees paid by the client to the auditor divided by total fees of the audit office.
ALTZS	Indicator variable equal to 1 if the Altman's Z-score based on Altman (1968) ≥ 2.99, and 0 otherwise.
	Control Variables
SPECIAL	Indicator variable equal to 1 if the auditor's two-digit SIC-industry share is top-ranked at the city-level based on the client's CBSA, and 0 otherwise.
AUDCH	Indicator variable equal to 1 if the firm changed its auditor, and 0 otherwise.
SEC	Indicator variable equal to 1 if the client is located in the same CBSA as an SEC office, and 0 otherwise (`https://www.sec.gov/page/sec-regional-offices`; accessed on October 1, 2018).
PCAOB	Indicator variable equal to 1 if the audit office is located in the same CBSA as a PCAOB office, and 0 otherwise (`https://pcaobus.org/About/Pages/Contact.aspx`; accessed on October 1, 2018).
POPULATION	Natural logarithm of the total population in the audit office's CBSA (`https://www.census.gov/data/tables/2017/demo/popest/total-metro-and-micro-statistical-areas.html`; accessed on October 1, 2018).
SIZE	Natural logarithm of the market value of equity.
MB	Market-to-book value, calculated as market value divided by book value of common equity for firms with positive market-to-book values, and 0 otherwise.
MBNEG	Indicator variable equal to 1 if a firm has a negative market-to-book value, and 0 otherwise.
LEV	Leverage, defined as long-term debt plus short-term debt plus the current portion of long-term debt divided by total capital plus short-term debt plus the current portion of long-term debt.
BETA	Beta factor from the market model regression.
SURPNEG	Indicator variable equal to 1 if a firm has a negative earnings surprise (*SURP*), and 0 otherwise.
ANALYST	Natural logarithm of 1 plus the number of analysts following the firm.
RET	Recent fiscal year stock return.
	Fixed Effects Variables
AUD	Set of three auditor dummies.
IND	Set of seven industry dummies based on the SIC Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration (`https://www.osha.gov/pls/imis/sic_manual.html`; accessed on October 1, 2018).
YEAR	Set of four year dummies.
	Additional Analyses Variables
AFIMP	Audit fees paid by the client to the auditor divided by total fees of the audit office.
NAFIMP	Non-audit fees paid by the client to the auditor divided by total fees of the audit office.

Note: This table presents the variable definitions.

5.4.1.2 Earnings Response Coefficient—Descriptive Statistics

Table 5.3 contains the descriptive statistics for all variables in the main regressions except the auditor, industry, and year dummies. The average firm's cumulative excess stock return over the Russell 3000 return ranges between -0.213 and 0.202 (mean of 0.004). The earnings surprise is close to zero, whether concentrating on the mean or the median. This finding can be interpreted to mean that, on average, firms' reported earnings meet the latest analysts' forecasts, and it might indicate that firms attempt to avoid earnings surprises (Dichev et al. 2013). Moreover, approximately 30.72% of all earnings surprises are negative. The untransformed market value of equity of a median firm-year is approximately $2.168 billion. Only 2.11% of the sample firms had an auditor change, which is quite low but comparable to other studies (e.g., Barua et al. 2017). The sample includes firms financing all of their activities from equity and retained earnings (*LEV* equals 0.000) and indebted firms (maximum of *LEV* equals 1.443). The variables capturing a firm's growth opportunities—i.e., *MB* and *MBNEG*—exhibit the highest skewness and kurtosis, and fewer than 2.80% of all firm-years have negative market-to-book ratios. The mean observation of beta equals 1.076. Overall, 57.43% of all observations are classified as "safe" in terms of the firm's financial condition as measured by Altman's Z-score. The median firm in the sample has approximately 12 analysts' earnings forecasts. The median sample firm is located in a comparatively equally large city as in the Big 4 sample of DeFond et al. (2018), and the city population totals approximately 3,671,093 (versus 3,439,809). However, only 36.79% of all firm-years are located in the same city as an SEC office. 50.73% of all audit offices are located in the same city as a PCAOB office, which is, in contrast, higher than the corresponding figure in the sample of DeFond et al. (2018). Considering all firm-years, 67.58% are audited by city-industry specialists; this percentage is very close to the proportion of industry leaders at the city-level in Krishnan et al. (2013). Finally, Table 5.3 also illustrates that on average, audit offices are quite dependent on clients. Although the median (0.036) of the client dependence measure *IMPORTANCE* is clearly lower than the mean (0.093), losing the median client would mean that an audit office would lose approximately 4% of its total fees.

Table 5.3: Descriptive Statistics for the Full Sample

	Mean	**Std. Dev.**	**25%**	**50%**	**75%**	**Min.**	**Max.**
CAR	0.004	0.071	-0.032	0.005	0.043	-0.213	0.202
COEC	0.108	0.043	0.081	0.098	0.125	0.036	0.271
SURP	0.000	0.006	-0.001	0.000	0.002	-0.028	0.019
IMPORTANCE	0.093	0.155	0.014	0.036	0.093	0.002	0.897
ALTZS	0.574	0.494	0.000	1.000	1.000	0.000	1.000
SPECIAL	0.676	0.468	0.000	1.000	1.000	0.000	1.000
AUDCH	0.021	0.144	0.000	0.000	0.000	0.000	1.000
SEC	0.368	0.482	0.000	0.000	1.000	0.000	1.000
PCAOB	0.507	0.500	0.000	1.000	1.000	0.000	1.000
POPULATION	15.145	0.877	14.485	15.116	15.638	13.305	16.816
SIZE	21.626	1.497	20.526	21.497	22.615	18.661	25.709
MB	3.567	4.047	1.560	2.400	3.870	0.000	28.330
MBNEG	0.028	0.164	0.000	0.000	0.000	0.000	1.000
LEV	0.346	0.286	0.110	0.327	0.511	0.000	1.443
BETA	1.076	0.673	0.610	1.013	1.431	-0.215	3.385
SURPNEG	0.307	0.461	0.000	0.000	1.000	0.000	1.000
ANALYST	2.509	0.588	2.079	2.565	2.996	1.386	3.664
RET	0.196	0.370	-0.035	0.148	0.361	-0.531	1.619
n	6,018						

Note: This table presents the descriptive statistics for the pooled data. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The variables are as defined in Table 5.2.

This study focuses on whether the economic dependence hypothesis applies irrespective of the client's financial condition. Accordingly, firms are classified "safe" or "non-safe" regarding their financial situation. Therefore, it is of special interest whether the descriptive statistics differ for the "safe" sample and the "non-safe" sample. Table 5.4 contains the descriptive statistics for the two subsamples. It can be seen that not only the mean and median values of *CAR*, *SURP*, and *COEC* but also 9 out of 13 control variables differ significantly when comparing the "safe" sample and the "non-safe" sample. Firms that are more likely to be financially distressed thus have comparatively lower abnormal stock returns and higher ex ante cost of equity capital while simultaneously achieving a lower unadjusted fiscal year stock return. In addition, these firms are more heavily indebted and have on average less *MB* and a higher rate of negative earnings surprises. All these findings seem plausible.

In particular, auditors are on average significantly more economically dependent on firms in the "non-safe" sample (with a mean of 0.111 compared to 0.080 in the "safe" sample). This could be due, for example, to the fact that these clients face higher risks and the auditors must conduct the audit more carefully and demand a risk premium. In turn, this would lead to higher fees and thus higher economic importance of the client. To rule out that this effect has a significant impact on the results of the main analyses, this topic is dealt with again in the additional analyses in subsection 5.5.4.

With regard to the following empirical test of *H2*, further inferences can also be made. The descriptive statistics show clear differences between the two subsamples. This might indicate that the independent variables have different effects on shareholder's perceptions of earnings quality. Since this at least cannot be excluded, a sample split is performed to allow different coefficients for all independent variables for the samples of financially "safe" and "non-safe" firms.

Table 5.4: Descriptive Statistics for the "Safe" Sample and "Non-Safe" Sample

	Financial Condition: "Safe" Sample (1)		Financial Condition: "Non-Safe" Sample (2)		Difference (1) vs. (2) p-value	
Variable	**Mean**	**Median**	**Mean**	**Median**	**t-Test**	**Wilcoxon Test**
CAR	0.006	0.007	0.002	0.002	0.046	0.032
COEC	0.101	0.095	0.118	0.107	0.000	0.000
SURP	0.001	0.000	0.000	0.000	0.000	0.055
IMPORTANCE	0.080	0.031	0.111	0.044	0.000	0.000
SPECIAL	0.665	1.000	0.690	1.000	0.036	0.036
AUDCH	0.021	0.000	0.021	0.000	0.866	0.866
SEC	0.369	0.000	0.367	0.000	0.848	0.848
PCAOB	0.498	0.000	0.520	1.000	0.103	0.103
POPULATION	15.149	15.084	15.138	15.263	0.630	0.557
SIZE	21.683	21.488	21.550	21.504	0.001	0.022
MB	4.033	2.870	2.939	1.870	0.000	0.000
MBNEG	0.013	0.000	0.047	0.000	0.000	0.000
LEV	0.225	0.183	0.509	0.489	0.000	0.000
BETA	0.993	0.960	1.189	1.108	0.000	0.000
SURPNEG	0.268	0.000	0.361	0.000	0.000	0.000
ANALYST	2.526	2.565	2.485	2.485	0.007	0.010
RET	0.227	0.171	0.153	0.119	0.000	0.000
n	3,456		2,562			

Note: This table compares the descriptive statistics for the "safe" sample in column (1) and "non-safe" sample in column (2). All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The third column presents two-tailed p-values from the t-test (Wilcoxon test) testing the difference in means (medians). The variables are as defined in Table 5.2.

Table 5.5 presents the Pearson product-moment correlation coefficients for the pooled sample. Analyzing all correlation coefficients does not lead to serious concerns regarding potential collinearity problems. Having said that, ERC models, in general, can be problematic with respect to collinearity because the respective regressions include many interaction terms, and hence, collinearity is present by construction.[65] However, this does not pose a major problem as long as the collinear variables are significant and one rejects the null hypothesis that all coefficient estimates are jointly zero (Brambor et al. 2006; O'Brien 2007).

[65] The VIFs might hint at possible problems with collinearity. Nevertheless, excluding the interaction terms with the earnings surprise and the industry dummies results in a maximum VIF of 2.72 for the variable *POPULATION*.

Table 5.5: Pearson Product-Moment Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) *CAR*	1.000																	
(2) *COEC*	0.006	1.000																
	(0.645)																	
(3) *SURP*	0.233	-0.055	1.000															
	(0.000)	(0.000)																
(4) *IMPORTANCE*	-0.002	-0.028	0.013	1.000														
	(0.878)	(0.032)	(0.322)															
(5) *ALTZS*	0.026	-0.196	0.062	-0.098	1.000													
	(0.046)	(0.000)	(0.000)	(0.000)														
(6) *SPECIAL*	-0.014	-0.015	-0.014	0.179	-0.027	1.000												
	(0.262)	(0.258)	(0.288)	(0.000)	(0.036)													
(7) *AUDCH*	-0.009	0.034	-0.023	-0.003	-0.002	-0.014	1.000											
	(0.479)	(0.008)	(0.072)	(0.839)	(0.866)	(0.264)												
(8) *SEC*	-0.002	-0.059	0.001	-0.237	0.002	-0.213	0.005	1.000										
	(0.888)	(0.000)	(0.950)	(0.000)	(0.848)	(0.000)	(0.672)											
(9) *PCAOB*	-0.013	-0.004	-0.032	-0.338	-0.021	-0.142	-0.006	0.540	1.000									
	(0.322)	(0.781)	(0.014)	(0.000)	(0.103)	(0.000)	(0.663)	(0.000)										
(10) *POPULATION*	-0.020	-0.022	-0.013	-0.424	0.006	-0.186	-0.008	0.475	0.764	1.000								
	(0.115)	(0.093)	(0.302)	(0.000)	(0.630)	(0.000)	(0.530)	(0.000)	(0.000)									
(11) *SIZE*	-0.016	-0.348	0.033	0.264	0.044	0.117	-0.069	0.054	0.057	0.072	1.000							
	(0.226)	(0.000)	(0.009)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)								
(12) *MB*	0.014	-0.148	-0.012	-0.031	0.134	-0.029	-0.010	0.107	0.015	0.031	0.193	1.000						
	(0.280)	(0.000)	(0.359)	(0.016)	(0.000)	(0.025)	(0.457)	(0.000)	(0.257)	(0.018)	(0.000)							
(13) *MBNEG*	0.003	0.083	0.012	-0.003	-0.101	-0.037	-0.011	0.036	0.034	0.037	-0.006	-0.148	1.000					
	(0.835)	(0.000)	(0.358)	(0.828)	(0.000)	(0.004)	(0.411)	(0.006)	(0.008)	(0.004)	(0.630)	(0.000)						
(14) *LEV*	-0.007	0.093	-0.045	0.122	-0.491	0.072	-0.011	0.019	0.050	0.037	0.142	0.129	0.510	1.000				
	(0.608)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.400)	(0.149)	(0.000)	(0.004)	(0.000)	(0.000)	(0.000)					
(15) *BETA*	0.030	0.379	0.008	0.012	-0.144	0.012	0.005	-0.082	-0.044	-0.057	-0.224	-0.112	0.049	0.061	1.000			
	(0.019)	(0.000)	(0.530)	(0.336)	(0.000)	(0.342)	(0.696)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(16) *SURPNEG*	-0.249	0.113	-0.560	0.013	-0.100	0.023	0.010	-0.023	0.029	0.012	-0.088	-0.038	0.015	0.063	0.050	1.000		
	(0.000)	(0.000)	(0.000)	(0.319)	(0.000)	(0.079)	(0.439)	(0.070)	(0.025)	(0.342)	(0.000)	(0.003)	(0.233)	(0.000)	(0.000)			
(17) *ANALYST*	-0.005	-0.171	0.034	0.136	0.035	0.057	-0.068	0.019	0.024	0.029	0.734	0.148	0.017	0.081	-0.128	-0.083	1.000	
	(0.692)	(0.000)	(0.009)	(0.000)	(0.007)	(0.000)	(0.000)	(0.138)	(0.063)	(0.024)	(0.000)	(0.000)	(0.176)	(0.000)	(0.000)	(0.000)		
(18) *RET*	0.024	-0.178	0.058	-0.017	0.098	-0.005	0.024	0.027	-0.004	-0.003	0.077	0.189	0.017	-0.005	0.051	-0.068	-0.037	1.000
	(0.060)	(0.000)	(0.000)	(0.182)	(0.000)	(0.696)	(0.060)	(0.038)	(0.736)	(0.835)	(0.000)	(0.000)	(0.178)	(0.682)	(0.000)	(0.000)	(0.004)	

Note: This table shows the Pearson product-moment correlation coefficients for the pooled data. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The numbers in parentheses indicate two-tailed p-values. The variables are as defined in Table 5.2.

5.4.1.3 Earnings Response Coefficient—Multivariate Analyses

To analyze whether an auditor's economic dependence on a client is related to shareholders' perceptions of earnings quality (*H1*), one must consider the coefficient of the interaction term between *SURP* and the proxy for economic dependence on the client.

Table 5.6, column (1) presents the results. The estimated coefficient of the interaction of *IMPORTANCE* with *SURP* is negative (coefficient of -2.6173), and the null hypothesis can be rejected (p-value of 0.042, one-tailed test). Moreover, it is of further interest whether this association is not only statistically significant but also economically relevant. Therefore, the percentage change in the ERC for an average firm is considered for two different scenarios: (1) an increase from the 25^{th} percentile (0.014) of *IMPORTANCE* to the 75^{th} percentile (0.093) of *IMPORTANCE*, and (2) an increase by one standard deviation (0.155) in *IMPORTANCE* from its mean (from 0.093 to 0.248). For the first scenario, comparing the ERCs reveals that the ERC for an average firm changes from 2.955 (low client importance) to 2.749 (high client importance), a decrease of 6.96%. The second scenario reveals a 14.78% lower ERC after increasing *IMPORTANCE* by one standard deviation. Thus, the association of *IMPORTANCE* with the ERC is also of economic interest. There seems to be evidence that shareholders perceive the economic importance of the client as a threat to auditor independence.

Even if one considers the effects on the stock price for an average firm in dollars (cf. Collins and Kothari 1989), the increase in the economic importance of the client in the second scenario would lead to an approximately 5-cent decrease in the stock price assuming a positive earnings surprise in the amount of the mean absolute *SURP*.[66] This suggests that shareholders consider earnings information to be less useful for economic important clients.

[66] This is based on a mean stock price 2 trading days before the earnings announcement date that is used to scale *SURP* of \$39.13 and a mean absolute *SURP* of 0.003. This results in the following calculation: $-2.6173 \times 0.155 \times 0.003 \times 39.13 \approx -5$ cent.

Table 5.6: OLS Regressions—Earnings Response Coefficient and Economic Importance of the Client

	Dependent Variable = *CAR*								
	Full Sample (1)			Financial Condition: "Safe" Sample (2)			Financial Condition: "Non-Safe" Sample (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
SURP	9.2334	6.5679	0.160	4.8798	12.2963	0.692	14.2812	7.6538	0.062
IMPORTANCE	-0.0001	0.0071	0.990	0.0058	0.0101	0.561	-0.0075	0.0101	0.455
IMPORTANCE×SURP	-2.6173	1.5178	0.085	-0.2805	3.0542	0.927	-4.0904	1.9137	0.033
SPECIAL	-0.0012	0.0021	0.563	-0.0029	0.0029	0.328	0.0010	0.0030	0.732
AUDCH	-0.0055	0.0068	0.415	-0.0001	0.0085	0.987	-0.0127	0.0109	0.247
SEC	-0.0005	0.0024	0.840	-0.0024	0.0035	0.496	0.0016	0.0033	0.637
PCAOB	0.0032	0.0029	0.270	0.0069	0.0042	0.100	-0.0013	0.0041	0.747
POPULATION	-0.0025	0.0017	0.141	-0.0037	0.0023	0.112	-0.0010	0.0023	0.675
SIZE	-0.0008	0.0011	0.474	-0.0010	0.0016	0.520	-0.0005	0.0015	0.730
MB	0.0003	0.0003	0.237	0.0000	0.0003	0.931	0.0007	0.0004	0.066
MBNEG	-0.0008	0.0068	0.910	0.0029	0.0120	0.811	0.0025	0.0087	0.774
LEV	0.0040	0.0044	0.368	0.0061	0.0070	0.383	0.0021	0.0079	0.790
BETA	0.0017	0.0015	0.265	0.0027	0.0024	0.269	0.0016	0.0020	0.410
SURPNEG	-0.0256	0.0024	0.000	-0.0256	0.0033	0.000	-0.0257	0.0034	0.000
ANALYST	-0.0005	0.0025	0.858	0.0017	0.0035	0.628	-0.0027	0.0036	0.448
SPECIAL×SURP	0.5385	0.4590	0.241	1.1917	0.8338	0.153	0.3562	0.5267	0.499
AUDCH×SURP	-0.9469	1.1792	0.422	-0.6675	2.0355	0.743	-0.7098	1.4298	0.620
SEC×SURP	0.1108	0.4566	0.808	0.3788	0.9144	0.679	0.1931	0.5031	0.701
PCAOB×SURP	-0.1798	0.6326	0.776	-2.8270	1.2662	0.026	0.6555	0.7338	0.372
POPULATION×SURP	0.0101	0.3854	0.979	1.4309	0.6473	0.027	-0.6004	0.4766	0.208
SIZE×SURP	-0.2512	0.2068	0.225	-0.8174	0.4237	0.054	-0.0841	0.2317	0.717
MB×SURP	0.0412	0.0610	0.499	0.1358	0.0803	0.091	-0.0144	0.0585	0.805
MBNEG×SURP	1.9224	1.2311	0.119	-8.1977	3.1287	0.009	1.6052	1.2789	0.210
LEV×SURP	-2.9513	0.8855	0.001	-0.1273	1.8764	0.946	-2.5822	1.1386	0.024
BETA×SURP	0.0457	0.2544	0.857	-0.2383	0.6256	0.703	0.1726	0.2867	0.547
SURPNEG×SURP	-1.3351	0.5390	0.013	-2.1762	0.9720	0.025	-1.0878	0.6773	0.109
ANALYST×SURP	1.1483	0.5125	0.025	1.1620	1.0158	0.253	1.3639	0.6060	0.025

Table 5.6: OLS Regressions—Earnings Response Coefficient and Economic Importance of the Client (continued)

	Dependent Variable = *CAR*								
	Full Sample (1)			Financial Condition: "Safe" Sample (2)			Financial Condition: "Non-Safe" Sample (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
Intercept	0.0697	0.0296	0.018	0.0666	0.0396	0.093	0.0807	0.0412	0.050
Auditor Fixed Effects:		Yes			Yes			Yes	
Industry Fixed Effects:		Yes			Yes			Yes	
Year Fixed Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		6,018			3,456			2,562	
Adjusted R^2		0.087			0.084			0.102	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression model includes auditor, industry, and year fixed effects, and standard errors are clustered by firm. The regression model also includes a set of interactions between *SURP* and the auditor, industry, and year dummies that are omitted from the table. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The reported p-values are two-tailed. The following regression model is tested: $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 IMPORTANCE_{it} + \beta_3 IMPORTANCE_{it} \times SURP_{it} + \sum_{j=4}^{15} \beta_j CONTROL_{it} + \sum_{j=16}^{27} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=28}^{30} \beta_j AUD_{it} + \sum_{j=31}^{33} \beta_j AUD_{it} \times SURP_{it} + \sum_{j=34}^{40} \beta_j IND_{it} + \sum_{j=41}^{47} \beta_j IND_{it} \times SURP_{it} + \sum_{j=48}^{51} \beta_j YEAR_{it} + \sum_{j=52}^{55} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, ANALYST_{it}\}$. *AUD* is a set of three auditor dummies, *IND* is a set of seven industry dummies, and *YEAR* represents four year dummies. The variables are as defined in Table 5.2.

In addition, the regressions in Table 5.6, column (2) and column (3) address the question of whether the economic dependence hypothesis applies irrespective of the client's financial condition (*H2*). Therefore, the sample is divided into two subsamples based on the client's financial condition: firms classified as "safe" and firms classified as "non-safe" according to Altman's Z-score. The sample split is performed both to provide a simple and intuitive method and to allow different coefficients for the sample of financially "safe" and "non-safe" firms. The latter is justified by the fact that the influence of the variable of interest and the control variables on perceived earnings quality are likely to differ for these two subsamples. This topic was already mentioned during the hypothesis development and dealt with in the context of the descriptive statistics.

The regression for the firms in sound financial health is shown in column (2) of Table 5.6. Analyzing those firms with Altman's Z-score values greater than or equal to 2.99, no significant association between client dependence and the ERC can be observed. An interpretation of this result might be that shareholders are not concerned about possible independence issues stemming from stronger economic bonds between the client and the auditor if the client is in a "safe" financial condition. Moreover, there is empirical evidence that economic dependence on the client is negatively associated with the shareholders' perceptions of earnings quality if the client is more likely to be financially distressed.

The estimate of the respective interaction term $IMPORTANCE \times SURP$ in column (3) of Table 5.6 totals -4.0904 and is significant with a one-tailed p-value of 0.016. Accordingly, the economic consequences for the two scenarios described above are greater. The following effects can be observed for an average firm in the "non-safe" subsample: a decline in the ERC by 17.06% for case (1) or 35.77% for case (2), respectively.

Overall, the empirical evidence provides support for *H1* and *H2*, and it demonstrates that shareholders' concerns about auditor independence and earnings quality might be conditional on the client's circumstances—such as the client's financial condition. Finally, the findings complement recent studies suggesting that the implementation of SOX seems to have only somewhat mitigated (perceived) threats to auditor independence (Hollingsworth and Li 2012; Kao et al. 2014).

5.4.2 Ex Ante Cost of Equity Capital

5.4.2.1 Ex Ante Cost of Equity Capital—Model Specification and Control Variables

Another common measure of perceived earnings quality and, hence, perceived auditor independence is the cost of equity capital (DeFond and Zhang 2014; Khurana and Raman 2004; Krishnan et al. 2013; Lambert et al. 2007). Thanks to the auditor's ability to mitigate agency problems caused by information asymmetries between managers and shareholders through the assurance of high earnings quality (Watts and Zimmerman 1983), the cost of equity capital should decrease with more credible financial information due to reduced information risk. Although Hollingsworth and Li (2012) and Khurana and Raman (2006) examined a positive relation between economic dependence on the client and the ex ante cost of equity capital, which might, however, be partly alleviated by the implementation of SOX, it still remains unclear whether this association exists irrespective of the client's financial condition.

In accordance with prior studies, the PEG ratio (price/earnings ratio divided by short-term earnings growth) approach of Easton (2004) is employed. Here, the ex ante cost of equity capital is estimated by calculating the implied expected rate of return on equity capital assuming no future changes in abnormal earnings growth and no future dividends.[67] Therefore, only data for the one- and two-year-forward analysts' earnings forecast and the price per share are required. Thus, the PEG ratio has not only become popular in the accounting literature but also among analysts when building their stock recommendations (Easton 2004). Furthermore, Botosan and Plumlee (2005) conclude that the PEG ratio approach dominates other existing models.[68] Due to these advantages, the Easton (2004) model is used

[67] To check the robustness of the results, the ex ante cost of equity capital is also estimated by calculating the implied expected rate of return on equity capital assuming only no future changes in abnormal earnings growth (MPEG ratio; Easton 2004; Khurana and Raman 2006). The sample declines to 5,099 firm-years because analysts' dividend forecasts are needed for the calculation; this study's findings remain unchanged. Another approach to estimating the ex ante cost of capital (assuming no abnormal earnings growth) is to use the inverse of the forward price/earnings ratio (PE ratio). If this proxy for the dependent variable is used, the coefficient of *IMPORTANCE* is always significant—irrespective of the firm's financial condition. Nevertheless, this topic is dealt with again during the additional analyses in subsection 5.5.2.2, and further approaches to calculating ex ante cost of equity capital are used.

[68] For a detailed discussion of the different models used to calculate the ex ante cost of equity capital, please refer to Botosan and Plumlee (2005).

throughout the main analyses:

$$COEC_{it} = \sqrt{\frac{EPS2_{it} - EPS1_{it}}{P_{it}}}\,, \tag{5.3}$$

where *COEC* represents the client-specific ex ante cost of equity capital, *EPS1* denotes the one-year-forward mean analysts' earnings per share forecast at fiscal year-end, *EPS2* is the two-year-forward mean analysts' earnings per share forecast at fiscal year-end, and P defines the fiscal year-end price per share.

The following model is examined:

$$\begin{aligned} COEC_{it} = \alpha_0 + \beta_1 IMPORTANCE_{it} + \sum_{j=2}^{12} \beta_j CONTROL_{it} \\ + \sum_{j=13}^{15} \beta_j AUD_{it} + \sum_{j=16}^{22} \beta_j IND_{it} + \sum_{j=23}^{26} \beta_j YEAR_{it} + \varepsilon_{it}\,, \end{aligned} \tag{5.4}$$

where:

$$\begin{aligned} CONTROL_{it} = \big\{ & SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, \\ & SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, RET_{it} \big\}. \end{aligned}$$

As in Equation 5.2, auditor, industry, and year fixed effects are included, and the control variables (*CONTROL*) are nearly the same. However, instead of the variables *SURPNEG* and *ANALYST*, this model additionally controls for a firm's total risk measured by its recent fiscal year stock return (*RET*).

5.4.2.2 Ex Ante Cost of Equity Capital—Descriptive Statistics

Because the ERC and the ex ante cost of equity capital regressions are based on the same sample, one may refer to the discussion of the descriptive statics in subsection 5.4.1.2. However, some further points are in order. The mean of *COEC* equals 0.108, which is quite similar to the results of prior studies (e.g., Easton 2004; Khurana and Raman 2004; Krishnan et al. 2013). Apart from *SPECIALIST* and *PCAOB*, all variables are significantly correlated with *COEC*. *RET* is positively skewed with a mean of 0.196 and a median of 0.148. The sample's average firm-year's ex post stock return is higher than its implied cost of equity capital for the

fiscal year, which might not be surprising because the U.S. market—e.g., Russell 3000—exhibited a notable increase between 2009 and 2013.

As mentioned above, the mean value of *COEC* is higher for firms classified as financially "non-safe", while their *RET* is lower compared to firms in the "safe" sample (cf. Table 5.4).

5.4.2.3 Ex Ante Cost of Equity Capital—Multivariate Analyses

Referring to column (1) of Table 5.7, the estimated coefficient of *IMPORTANCE* of 0.0083 is significant (p-value of 0.032, one-tailed test). Thus, an auditor's economic dependence on the client is positively related to *COEC*. The assessment of the economic relevance is much more intuitive here. An increase in *IMPORTANCE* by one standard deviation leads to an increase in the ex ante cost of equity capital of 0.13 percentage points which corresponds to an increase of approximately 1% for an average firm, since the mean value of *COEC* totals 0.108. Comparing *COEC* for an average firm with low client importance (0.014) and high client importance (0.093) results in an increase in the cost of capital of 0.07 percentage points.

Focusing on *H2*, the regression results draw a clear picture (column (2) versus column (3) of Table 5.7). Shareholders have a negative perception of client dependence. However, this effect can only be observed in the subsample of firms that are more likely to be in financial distress (coefficient of *IMPORTANCE* of 0.0158; p-value of 0.015, one-tailed test). Looking at the economic significance, an increase in *IMPORTANCE* by one standard deviation now even leads to an increase in the ex ante cost of equity capital of 0.24 percentage points.

To conclude, the results of the ex ante cost of equity capital model are qualitatively similar to those of the ERC model. Shareholders seem to have a negative perception of the economic importance of a client. However, this applies in particular to clients that are more likely to be in financial distress, and these empirical results indicate that shareholders' perceptions of auditor independence are conditional on clients' circumstances.

Table 5.7: OLS Regressions—Ex Ante Cost of Equity Capital and Economic Importance of the Client

	Dependent Variable = *COEC*								
	Full Sample (1)			Financial Condition: "Safe" Sample (2)			Financial Condition: "Non-Safe" Sample (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
IMPORTANCE	0.0083	0.0045	0.065	-0.0004	0.0046	0.938	0.0158	0.0073	0.030
SPECIAL	0.0006	0.0014	0.687	0.0007	0.0015	0.632	-0.0002	0.0025	0.949
AUDCH	0.0058	0.0034	0.085	0.0034	0.0037	0.352	0.0093	0.0058	0.110
SEC	-0.0003	0.0017	0.860	-0.0015	0.0019	0.407	0.0006	0.0028	0.840
PCAOB	0.0002	0.0023	0.924	0.0033	0.0023	0.159	-0.0029	0.0037	0.426
POPULATION	0.0016	0.0013	0.206	-0.0005	0.0013	0.706	0.0047	0.0022	0.035
SIZE	-0.0086	0.0006	0.000	-0.0061	0.0006	0.000	-0.0112	0.0009	0.000
MB	-0.0001	0.0002	0.420	-0.0004	0.0002	0.054	0.0001	0.0003	0.667
MBNEG	0.0048	0.0062	0.442	-0.0031	0.0097	0.751	0.0151	0.0077	0.050
LEV	0.0191	0.0030	0.000	0.0097	0.0038	0.011	0.0089	0.0061	0.145
BETA	0.0162	0.0012	0.000	0.0098	0.0014	0.000	0.0195	0.0016	0.000
RET	-0.0167	0.0015	0.000	-0.0106	0.0018	0.000	-0.0217	0.0027	0.000
Intercept	0.2381	0.0227	0.000	0.2272	0.0209	0.000	0.2427	0.0444	0.000
Auditor Fixed Effects:		Yes			Yes			Yes	
Industry Fixed Effects:		Yes			Yes			Yes	
Year Fixed Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		6,018			3,456			2,562	
Adjusted R^2		0.313			0.210			0.373	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression model includes auditor, industry, and year fixed effects, and standard errors are clustered by firm. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles. The reported p-values are two-tailed. The following regression model is tested: $COEC_{it} = \alpha_0 + \beta_1 IMPORTANCE_{it} + \sum_{j=2}^{12} \beta_j CONTROL_{it} + \sum_{j=13}^{15} \beta_j AUD_{it} + \sum_{j=16}^{22} \beta_j IND_{it} + \sum_{j=23}^{26} \beta_j YEAR_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, RET_{it}\}$. *AUD* is a set of three auditor dummies, *IND* is a set of seven industry dummies, and *YEAR* represents four year dummies. The variables are as defined in Table 5.2.

5.5 Additional Analyses

5.5.1 Measurement of the Economic Importance of the Client

5.5.1.1 Audit Fee and Non-Audit Fee Measure

Although the client-specific total fees to the total fees of all clients of an audit office might be the most appropriate measure of economic dependence, the components of the total fees generated by a client—i.e., audit and non-audit fees—should also be examined. This would make it possible to find out which component is driving the observed effect, and therefore, would provide additional interesting insights. Thus, the total fees are divided into two components: audit and non-audit fees. *AFIMP* representing audit fees, and *NAFIMP* representing non-audit fees paid by the client, both divided by the total fees of the audit office.

Table 5.8 presents the results for the returns-earnings model. Column (1) of Table 5.8 reveals that only the earnings surprise interaction with *AFIMP* is significantly different from zero (p-value of 0.023, one-tailed test) and has a negative coefficient of -4.3654. An increase by the inter-quartile range (25^{th} to 75^{th} percentile) of *AFIMP* for an average firm decreases the ERC by 9.34%. Moreover, the results regarding *H2* are presented in column (2) and column (3) of Table 5.8. The coefficient of $AFIMP \times SURP$ is significant (one-tailed p-value of 0.016) for the respective regression for the subsample of companies with Altman's Z-score below 2.99; $NAFIMP \times SURP$ is always insignificant. The outcome suggests that audit fee dependence might drive shareholders' negative perceptions of client dependence. The two following arguments could explain this finding. First, auditor independence is primarily of interest to shareholders if the auditor provides audit services rather than non-audit services. This reasoning is also consistent with the experimental study conducted by Gul (1991) indicating that audit fees are the driver of bankers' perceptions of auditor independence. Second, there is some evidence that non-audit services decreased after the implementation of SOX (Ghosh et al. 2009; Li 2009), and hence, the importance of non-audit fees plus their relative contribution to client dependence issues is also expected to decline.

Table 5.8: OLS Regressions—Earnings Response Coefficient and Economic Importance of the Client Proxied by *AFIMP* and *NAFIMP*

	Dependent Variable = *CAR*								
	Full Sample (1)			Financial Condition: "Safe" Sample (2)			Financial Condition: "Non-Safe" Sample (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
SURP	9.8199	6.5647	0.135	4.5891	12.3573	0.710	15.3042	7.7864	0.050
AFIMP	-0.0056	0.0112	0.615	-0.0093	0.0166	0.576	-0.0055	0.0158	0.728
NAFIMP	0.0225	0.0331	0.496	0.0769	0.0465	0.098	-0.0296	0.0497	0.551
AFIMP×*SURP*	-4.3654	2.1952	0.047	-2.4177	4.0093	0.547	-5.9482	2.7688	0.032
NAFIMP×*SURP*	7.6366	8.2277	0.353	11.1024	18.2749	0.544	7.3107	9.9835	0.464
Control Variables:		Yes			Yes			Yes	
Intercept:		Yes			Yes			Yes	
Auditor Fixed Effects:		Yes			Yes			Yes	
Industry Fixed Effects:		Yes			Yes			Yes	
Year Fixed Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		6,018			3,456			2,562	
Adjusted R^2		0.087			0.084			0.102	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression model includes auditor, industry, and year fixed effects, and standard errors are clustered by firm. The regression model also includes a set of interactions between *SURP* and the control variables, auditor, industry, and year dummies that are omitted from the table. All continuous variables are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression model is tested: $CAR_{it} = \alpha_0 + \beta_1 SURP_{it} + \beta_2 AFIMP_{it} + \beta_3 NAFIMP_{it} + \beta_4 AFIMP_{it} \times SURP_{it} + \beta_5 NAFIMP_{it} \times SURP_{it} + \sum_{j=6}^{17} \beta_j CONTROL_{it} + \sum_{j=18}^{29} \beta_j CONTROL_{it} \times SURP_{it} + \sum_{j=30}^{32} \beta_j AUD_{it} + \sum_{j=33}^{35} \beta_j AUD_{it} \times SURP_{it} + \sum_{j=36}^{42} \beta_j IND_{it} + \sum_{j=43}^{49} \beta_j IND_{it} \times SURP_{it} + \sum_{j=50}^{53} \beta_j YEAR_{it} + \sum_{j=54}^{57} \beta_j YEAR_{it} \times SURP_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, SURPNEG_{it}, ANALYST_{it}\}$. *AUD* is a set of three auditor dummies, *IND* is a set of seven industry dummies, and *YEAR* represents four year dummies. The variables are as defined in Table 5.2.

In contrast, the results for *AFIMP* and *NAFIMP* in Table 5.9, column (1) are both insignificant. Thus, an auditor's economic dependence on the client is positively related to *COEC* only if it is measured as the percentage of the total fees generated by a client relative to the total fees earned from all clients. Moreover, *AFIMP* and *NAFIMP* are not related to *COEC* if the client is in a good financial shape (column (2) of Table 5.9). However, for clients in relatively poor financial condition (column (3) of Table 5.9), the non-audit fee proxy for client dependence is positively (coefficient of 0.0522) and significantly (p-value of 0.073, one-tailed test) associated with the firm's ex ante cost of equity capital. This finding seems not to accord with the results of the ERC model and raises the question of whether or why the models provide contradictory evidence.[69] However, further analyses show that this finding is not entirely robust but rather reveal results that are in accordance with the ERC model. In sum, the analyses predominantly suggest that audit fee dependence might drive shareholders' concerns about the economic importance of the client.

[69] The reason for this might be that the ERC—in broad terms—measures shareholders' perceptions of the quality of audited financial reports and does not directly address related issues of non-audit services. In addition, the ERC measures perceptions of the past, e.g., whether auditor independence was maintained during the audit of the financial statement. In contrast, the ex ante cost of equity capital refers to the future. Further, *NAFIMP* might imply that the incumbent auditor provides a high level of non-audit services. A high level of non-audit services might, in turn, indicate that the firm has recently undertaken risky projects (e.g., internal restructuring activities) that affect a firm's future development. Thus, more risky projects can lead to higher non-audit services provided by the auditor and, therefore, higher *NAFIMP* due to the auditor's involvement in project planning and organization. Ultimately, this reasoning may explain why *NAFIMP* is positively related to the ex ante cost of capital.

Table 5.9: OLS Regressions—Ex Ante Cost of Equity Capital and Economic Importance of the Client Proxied by *AFIMP* and *NAFIMP*

	Dependent Variable = *COEC*								
	Full Sample (1)			Financial Condition: "Safe" Sample (2)			Financial Condition: "Non-Safe" Sample (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
AFIMP	0.0059	0.0071	0.407	0.0047	0.0075	0.531	0.0099	0.0112	0.378
NAFIMP	0.0229	0.0238	0.336	-0.0242	0.0255	0.344	0.0522	0.0359	0.146
Control Variables:	Yes			Yes			Yes		
Intercept:	Yes			Yes			Yes		
Auditor Fixed Effects:	Yes			Yes			Yes		
Industry Fixed Effects:	Yes			Yes			Yes		
Year Fixed Effects:	Yes			Yes			Yes		
Clustered by:	Firm			Firm			Firm		
n	6,018			3,456			2,562		
Adjusted R^2	0.313			0.210			0.374		
$Prob > F$	0.000			0.000			0.000		

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression model includes auditor, industry, and year fixed effects, and standard errors are clustered by firm. All continuous variables are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression model is tested: $COEC_{it} = \alpha_0 + \beta_1 AFIMP_{it} + \beta_2 NAFIMP_{it} + \sum_{j=3}^{13} \beta_j CONTROL_{it} + \sum_{j=14}^{16} \beta_j AUD_{it} + \sum_{j=17}^{23} \beta_j IND_{it} + \sum_{j=24}^{27} \beta_j YEAR_{it} + \varepsilon_{it}$, where: $CONTROL_{it} = \{SPECIAL_{it}, AUDCH_{it}, SEC_{it}, PCAOB_{it}, POPULATION_{it}, SIZE_{it}, MB_{it}, MBNEG_{it}, LEV_{it}, BETA_{it}, RET_{it}\}$. *AUD* is a set of three auditor dummies, *IND* is a set of seven industry dummies, and *YEAR* represents four year dummies. The variables are as defined in Table 5.2.

5.5.1.2 National-Level-Based Measure

The literature suggests the use of office-level measures in audit research because the auditor's office is the decision-making unit (Francis et al. 1999; Wallman 1996). According to this, the appropriate measure of the economic importance of the client should be based on office-level information (DeFond and Francis 2005; Reynolds and Francis 2000). However, to examine whether client dependence at the national-level is also perceived to compromise auditor independence, all regressions are re-estimated using national-level-based measures of the economic importance of the client. Regarding the results of the ERC-related regressions no significant coefficient of the national-level-based measure of the economic importance of the client is found.[70] Thus, the empirical evidence does not support that shareholders perceive client importance at the national-level to be an issue of independence if perceptions are measured with the ERC metric, and this contradicts the findings of Ghosh et al. (2009). These results are also in contrast with the results of the ex ante cost of equity capital regressions. *IMPORTANCE* is always—i.e., irrespective of a firm's financial condition—significantly positively related to *COEC*. That client dependence at the national-level is perceived negatively by shareholders accords with other studies' results (Hollingsworth and Li 2012; Khurana and Raman 2006).

In summary, mixed—i.e., model-dependent—evidence regarding whether shareholders also perceive client importance at the national-level to be a threat to audit independence is found. Therefore, these results may corroborate the idea that the office-level approach is superior to the national-level approach in audit research because shareholders' concerns regarding economic dependence on the client are primarily observable for office-level measures.

5.5.2 Measurement of Perceived Earnings Quality

5.5.2.1 Alternative Specifications of the Earnings Response Coefficient Model

The ERC has several advantages as a measure of perceived earnings quality. However, there might be some considerable noise in ERC estimates (DeFond and Zhang 2014). To address this problem, several alternative analyses are performed.

First, sensitivity checks regarding the calculation of *CAR* include the use of different event windows, i.e., -2 to +2 and -3 to +3 trading days relative to the earnings announcement date, and different benchmark indices, i.e., the Dow Jones Indus-

[70] For the sake of brevity, all further results in this section are not tabulated.

trial Average or the Standard and Poor's 500 Composite are chosen instead of the Russell 3000. Second, outliers of *SURP* might influence the results (Gipper et al. 2015), and, instead of winsorizing *SURP*, the variable is truncated at the 1% and 99% levels, a robust regression is performed,[71] and *SURP* is calculated based on median analysts' earnings forecasts instead of mean analysts' earnings forecasts. Eventually, non-linearity in the market's responsiveness to earnings is considered. Therefore, the regressions are re-estimated with an interaction between *SURP* and the absolute value of *SURP* (Chen et al. 2014; Subramanyam 1996; Wilson 2008). Additionally, a variable indicating negative earnings and a corresponding interaction term with *SURP* are included in the model (Chen et al. 2014). The findings of this study are affected by none of the previous sensitivity analyses.

5.5.2.2 Alternative Approaches to Calculating the Ex Ante Cost of Equity Capital

The calculation of the ex ante cost of equity capital used throughout the study is based on Easton (2004). This method assumes no future changes in abnormal earnings growth and no future dividends.[72] Therefore, only data regarding the one- and two-year-forward analysts' earnings forecasts and the price per share are required. Consequently, due to the simple calculation, this measure became very popular in the accounting and auditing literature (Hollingsworth and Li 2012; Khurana and Raman 2006). Moreover, this approach leads to a comparatively low sample drop due to the unneeded data, for example, data regarding estimates about future dividends or long-term earnings growth.[73] Nevertheless, alternative approaches to compute the ex ante cost of equity capital are used to check the sensitivity of the findings.

[71] The robust regressions are also performed for the *COEC* model with qualitatively same results.

[72] This applies to the PEG ratio approach. The assumptions and findings for the PE ratio and MPEG ratio approach of Easton (2004) are discussed in the respective footnote in subsection 5.4.2.1 and are not a subject for further discussion here.

[73] However, to avoid loss of data, the dividends per share and, therefore, the dividend payout ratio is computed for $t = 0$ and assumed to be constant (Krishnan et al. 2013).

Therefore, two further models are used to calculate the ex ante cost of equity capital: (1) the model according to Ohlson and Juettner-Nauroth (2005),[74] and (2) the model introduced by Claus and Thomas (2001).[75]

Using the Ohlson and Juettner-Nauroth (2005) model, all results remain qualitatively unchanged. The regression using the ex ante cost of equity model of Claus and Thomas (2001) as the dependent variable shows the following picture: *IMPORTANCE* is significant in all three samples. However, the corresponding coefficient in the model of firms that are more likely to be financially distressed is almost twice as large compared to the coefficient in the "safe" sample. Although there is a considerable model-dependent decline in sample size—down to 1,564 observations for the "non-safe" sample using the Claus and Thomas (2001) model—in sum, the findings do not contradict the reasoning of this study. On the contrary, they show that shareholders care about auditor independence due to client importance issues, especially for clients in financial distress.

5.5.3 Measurement of Client's Financial Condition

The Altman's Z-score was chosen for several reasons, in particular, because it provides a classification of the client's financial condition. Nevertheless, it should be examined whether the results are sensitive to the choice of the measure of the firm's

[74] This model is also used by Gode and Mohanram (2003) or Krishnan et al. (2013) and is calculated as follows: $COECOJN = a + \sqrt{a^2 + \frac{EPS_1}{P}(\frac{EPS_2 - EPS_1}{EPS_1} - g)}$, where $a = 0.5(g + DPR)$, $COECOJN$ is the ex ante cost of equity capital according to Ohlson and Juettner-Nauroth (2005), EPS_1 denotes the one-year-forward analysts' earnings per share forecast, EPS_2 is the two-year-forward analysts' earnings per share forecast, P defines the price per share, DPR represents the dividend payout ratio, and g equals the long-term earnings growth rate which is assumed to be the expected inflation rate (Daske et al. 2008; Li and Mohanram 2014). Therefore, the 10-year breakeven inflation rate of the Federal Reserve Bank of St. Louis is used to capturing the expected inflation rate. In this respect, the procedure deviates from the literature where g is set to risk-free rate minus 3% (Gode and Mohanram 2003; Krishnan et al. 2013). This is due to the fact that low risk-free rates during the sample period applying this formula would lead to negative long-term earnings growth. On the one hand, this appears implausible and, on the other hand, leads to problems in the calculation of the ex ante cost of equity capital. By further checks, however, it was ensured that the obtained results should not be sensitive to the chosen approach.

[75] This approach is, for example, implemented by Li and Mohanram (2014) and the ex ante cost of equity capital is derived from the following equation: $P = BPS + \sum_{t=1}^{5} \frac{EPS_t - COECCT \times BPS_{t-1}}{(1+COECCT)^t} + \frac{(EPS_5 - COECCT \times BPS_4) \times (1+g)}{(COECCT - g)(1+COECCT)^5}$, where $COECCT$ is the ex ante cost of equity capital according to Claus and Thomas (2001), P defines the price per share, BPS is book value per share, EPS_t are the t-year-forward analysts' earnings per share forecast, BPS_t are the t-year-forward analysts' book value per share forecast, and g equals the long-term earnings growth rate which in turn equals the expected inflation rate (`https://fred.stlouisfed.org/series/T10YIEM`; accessed on October 1, 2018).

financial condition. Thus, all regressions are re-analyzed using three alternative measures of the firm's financial condition.

The first measure of financial distress used in other studies (e.g., Kim and Park 2014; Robin and Zhang 2015) is the Ohlson O-score (Ohlson 1980). To examine *H2*, the sample is divided at the median of the Ohlson O-score.[76] Analyzing all regressions leads to the conclusion that the findings are not altered if the Ohlson O-score is employed.

The second alternative proxy for the client's financial condition is the score from Zmijewski (1984), which is also used in studies such as DeFond et al. (2002).[77] For this study, firms are categorized as more likely to be financially distressed if the Zmijewski score is greater than the sample median. The findings from the ERC model are qualitatively similar to the results of the main analyses. However, the results for the ex ante cost of equity capital regression vary, since *IMPORTANCE* is significantly positively (p-value of 0.092, two-tailed test) related to *COEC* in the "safe" sample.

Third, a sample split based on the median of the probability of bankruptcy following Hopwood et al. (1994) as the proxy for firm's financial condition is performed.[78] The results are generally in line with the story told by this study. However, the one-tailed p-value for the coefficient of *IMPORTANCE*×*SURP* totals merely 0.131.

In contrast to the classification given by Altman (1968) but in line with the approaches above, the sample is divided at the median of Altman's Z-score as another robustness check. The results remain unchanged. Overall, the alternative ap-

[76] The Ohlson O-score is calculated as follows: $-1.32 - 0.407LNTA_{it} + 6.03\frac{TL_{it}}{TA_{it}} - 1.43\frac{WC_{it}}{TA_{it}} + 0.0757\frac{CL_{it}}{CA_{it}} - 2.37\frac{NI_{it}}{TA_{it}} - 1.83\frac{FFO_{it}}{TL_{it}} + 0.285INTWO_{it} - 1.72OENEG_{it} - 0.521\frac{NI_{it}-NI_{it-1}}{|NI_{it}|+|NI_{it-1}|}$, where *LNTA* equals the natural logarithm of GNP price-level index deflated total assets (GNP deflator set to 100 in 2009), *TL* denotes total liabilities, *TA* represents total assets, *WC* corresponds to working capital, *CL* equals current liabilities, *CA* is current assets, *NI* denotes net income, *FFO* means funds from operations, *INTWO* is an indicator variable equal to 1 if net income over the last two years is negative, and 0 otherwise, and *OENEG* is an indicator variable equal to 1 if total liabilities are greater than total assets, and 0 otherwise (Ohlson 1980).

[77] The Zmijewski score can be calculated as follows: $-4.336 - 4.513\frac{NI_{it}}{TA_{it}} - 5.679\frac{TL_{it}}{TA_{it}} + 0.004\frac{CA_{it}}{CL_{it}}$, where *NI* equals net income, *TA* equals total assets, *TL* denotes total liabilities, *CA* represents current assets, and *CL* denotes current liabilities (Zmijewski 1984).

[78] The probability of bankruptcy according to Hopwood et al. (1994) with the mentioned adjustment is calculated as follows: $-7.322 - 15.756\frac{NI_{it}}{TA_{it}} + 0.973\frac{CA_{it}}{SALES_{it}} - 1.677\frac{CA_{it}}{CL_{it}} + 5.985\frac{CA_{it}}{TA_{it}} - 9.145\frac{CASH_{it}}{TA_{it}} + 4.224\frac{LTD_{it}}{TA_{it}} + 0.214ln(SALES)$, where *NI* equals net income, *TA* represents total assets, *CA* denotes current assets, *SALES* equals total sales, and *CL* represents current liabilities, *CASH* represents Cash, and *LTD* is long-term debt. In line with prior literature an adjusted intercept of -7.322 instead of the incorrect original constant of 5.565 in Hopwood et al. (1994) is used in the analysis (Geiger and Raghunandan 2001; Ratzinger-Sakel 2013).

proaches strengthen the confidence in this study's finding that shareholders perceive a high economic importance of the client especially as a threat to auditor independence if the client is more likely to be financially distressed. This finding seems plausible particularly against the background of the conclusion of Dichev (1998, 1133) that Altman's Z-score and Ohlson O-score "are likely to complement each other well for sensitivity analysis" and "are quite accurate in predicting bankruptcy."[79]

5.5.4 Alternative Model Specifications

In addition to the measurement of the dependent and experimental variables, further modifications are made to the model to strengthen the confidence in this study's conclusions.

First, it might be the case that the proxy for the economic importance of the client is simultaneously an indicator of financial distress and, thus, firm's risk. In turn, higher risk of bankruptcy might be associated with a lower ERC and a higher ex ante cost of equity capital. The differences in the descriptive statistics between both samples presented in Table 5.4 could support such reasoning. However, the fact that the results presented in Table 5.6 and Table 5.7 show that the effect primarily exists within the sample of financially "non-safe" firms might contradict this reasoning. Nevertheless, to rule out this explanation for the observed results regarding the economic importance of the client, as a first step, *ALTZS* is also included in the regression of the full sample. The results are qualitatively unchanged. To exclude that the variable does not reflect a continuous effect of the financial situation within the subsamples, a continuous variable representing the Altman's Z-score is included in both models in all three samples. This also does not alter the results. Therefore, there is support for the notion that it is the economic importance of the client that affects shareholders' perceptions of earnings quality, in particular in the context of firms that are more likely to be financially distressed.

Furthermore, it should be checked whether the selected winsorization influences the results (Dyckman and Zeff 2014). Therefore, the regressions are re-estimated with non-winsorized variables, winsorized independent but not dependent variables, yearly winsorized variables, and winsorized variables at the 2.5^{th} and 97.5^{th} percentiles. Overall, the regression results do not alter the stated conclusions of this

[79] The reasons given are the derivation of the models using different methods, variables, samples, and time periods (Dichev 1998). Begley et al. (1996) also highlights the performance of the Ohlson O-score as an indicator of financial distress.

study. In addition, the industry fixed effects based on the SIC Division Structure as used by the U.S. Department of Labor, Occupational Safety & Health Administration are replaced by industry effects based on Frankel et al. (2002), the two-digit SIC, and the one-digit SIC. Qualitatively similar results are observed. Furthermore, industry fixed effects are omitted, or it is controlled for industries characterized by a high exposure to litigation risk by including an indicator variable. The results are nearly the same except for the interaction term $IMPORTANCE \times SURP$ in the ERC model for the full sample (one-tailed p-values equal to approximately 0.125). Finally, the results remain robust when including quarter fixed effects, clustering two-way by firm and time, and bootstrapping, respectively.[80]

5.5.5 The Influence of Audit Office Size

The empirical evidence presented in this study might be caused by audit office size effects because prior research suggests a relation between office size and audit quality (Francis and Yu 2009). To address this issue, all regressions are re-estimated while including a variable approximating audit office size. This variable is calculated as the natural logarithm of the sum of the total fees paid by all firms in the sample to an audit office in the respective fiscal year. Referring to the ERC model, significant results are only found for the sample of financially distressed firms, which supports *H2*. Focusing on the ex ante cost of equity capital model, the interpretations of the regressions regarding the client dependence proxy *IMPORTANCE* are not altered. Ultimately, it might be of interest that—similar to Krishnan et al. (2013)—the office size proxy is significantly correlated with the client dependence proxy (correlation coefficient of -0.563). In contrast to Krishnan et al. (2013), a significantly positive relation between office size and *COEC* is found.

Indeed, it can be argued that smaller auditors or audit offices are more likely to be economically dependent on a client. As a consequence, shareholders' doubts regarding auditor independence might be greater for smaller audit offices (Craswell et al. 2002; Li 2009), and those offices could drive the findings above. Thus, all regressions are re-estimated while excluding all audit offices with fewer than twelve clients; in other words, the smallest quartile of offices in the sample is dropped. If the respective firm-years are excluded, no significant relation between all proxies for client dependence and the ERC is found. On the basis of the ERC model, it might be concluded that smaller offices cause the observed association between client depen-

[80] For explanations of these sensitivity analyses, please refer to subsection 4.5.3.

dence and shareholders' perceptions of auditor independence. However, a different picture emerges when examining the ex ante cost of equity capital regressions: *IMPORTANCE* is significantly positively related to *COEC*. A final remark is in order: if one assumes that the ERC and ex ante cost of equity capital measure the same construct—shareholders' perceptions of earnings quality—then the mixed evidence might be explained by potential issues of "constructed collinearity"—because of a relatively large number of interaction terms—in ERC regressions, which is more likely to be a problem if the sample size decreases considerably.

5.6 Summary and Limitations

The study examines whether and when the Big 4 auditor-client economic bond is perceived to be a threat to auditor independence and, hence, reduces perceived earnings quality.

This analysis measures the economic importance of the client by the fees paid by the client to the auditor divided by the total fees of the auditor's office because the office-level approach might be superior to the national-level approach (Reynolds and Francis 2000). Consistent with the economic dependence hypothesis, a sample of 6,018 firm-year observations from 1,776 different 10-K filers for the years 2010 through 2014 reveals that an auditor's economic dependence on a client is negatively related to shareholders' perceptions of earnings quality. Foremost, the results show that this association applies predominantly to the subsample of clients that are more likely to be financially distressed. The findings are insensitive to the proxy employed for shareholders' perceptions, i.e., the ERC or ex ante cost of equity capital. This can be interpreted to mean that shareholders are primarily concerned about the economic importance of clients that are more likely to be in a financially difficult situation.

The study offers interesting insights into when shareholders have a negative perception of an auditor's economic dependence on a client. The findings collectively suggest that shareholders still perceive the economic importance of the client as a threat to auditor independence. Therefore, this study complements Kao et al. (2014), who consider independence in fact, and Hollingsworth and Li (2012), who examine the ex ante cost of equity capital around the implementation of SOX. This study's results suggest that SOX seems to mitigate threats to auditor independence only to a certain extent, and it might be of interest for the legislator to reconsider recent regulation concerning the economic importance of clients, particularly for financially distressed firms. Substantial further research regarding an economically reasonable regulatory intervention is required, and it must be emphasized that this study provides only initial evidence that shareholders' perceptions might be conditional on a client's circumstances. Therefore, the suggestive findings could motivate future research to examine other client circumstances, especially because little attention has been devoted to this issue in the context of perceived auditor independence and perceived earnings quality.

Some limitations of this study should also be discussed. First, the ERC and the ex ante cost of equity capital are relatively indirect proxies for shareholders' perceptions of earnings quality and, thus, perceived auditor independence because the perceived quality of earnings information is supposed to have a merely second-order effect on the firm's value (Zimmerman 2013).[81] However, there are also some major advantages of the perception-based measures used in this study such as their comprehensive and continuous character and the direct relation between shareholders' perceptions and economic practice (DeFond and Zhang 2014). Second, the ex ante cost of equity capital is estimated by calculating the implied expected rate of return on equity capital, meaning that the study is restricted to firms with positive one-year-forward analysts' earnings forecasts and earnings growth forecasts. Future research could address the question of whether shareholders' perceptions of audit-related questions differ for firms with negative earnings growth forecasts and how such differences might be explained. Third, the study's sample is restricted to Big 4 auditors, and further research could address shareholders' perceptions of the client dependence of non-Big 4 auditors, especially because non-Big 4 auditors are usually excluded from the analyses.

Fourth, the proxies for the economic importance of the client consider the audit office's total fees. However, the sample's total audit office fees cover only the fees of audited listed clients and not those of clients that are not audited, but that received non-audit services. Therefore, the audit office's total fees could be downward biased, and the measure of client importance might be upward biased. Moreover, internal information on the costs of audit and non-audit services could contribute to solving the aforementioned problem of the unobservability of client-specific quasi-rents. Fifth, there is a lack of evidence on whether and how shareholders estimate auditor independence in practice, and it is questionable whether they can determine the ratio of the total fees paid by the client to the total fees of the audit office (Dickins and Higgs 2005). Nevertheless, the aim here is to find a suitable proxy that reflects shareholders' assessment of auditor independence, regardless of how these perceptions are formed. What is more, the results—shareholders' concerns regarding auditor independence are primarily found at the office-level—support the recent conclusions that office-level measures are of more interest in audit-related research (Francis et al. 1999; Wallman 1996). This might therefore also apply to

[81] For studies discussing the advantages, limitations, and critical assumptions of the used measures refer for example to Dechow et al. (2010) or Kothari (2001).

audit studies examining shareholders' perceptions. Finally, although this study is based on the relevant literature with regard to the independent control variables, it would be beneficial to include further corporate governance factors that are not covered by firm size and the auditor-related variables in the model.

6 Earnings Quality and Shareholders' Satisfaction with the Management Board and the Supervisory Board—Evidence from German Annual General Meetings[82]

> *"Let me now move on to the main subject I want to discuss with you today: The need for high quality accounting standards. While this may seem miles removed from investor education, it really isn't. Educated investors need relevant, useful information to make their investment decisions – and that is what high quality accounting standards deliver."*

This is how Arthur Levitt, the former chairman of the SEC, began his speech at the Inter-American Development Bank, from which also the quotation at the very beginning of this dissertation is taken (Levitt 1998, 79). The enormous importance that Levitt attaches to earnings quality for shareholders' decision-making is obvious. The two previous studies dealt with shareholders' perceptions of earnings quality in the U.S. context. The study presented in this chapter aims to identify the importance shareholders attach to earnings quality. In order to examine whether shareholders actually consider earnings quality to be of such importance, as the above quotation of Levitt suggests, the voting results at the annual general meetings of German Prime Standard companies are analyzed.

While in the first two studies the focus is on shareholders' satisfaction with auditor selection and auditor independence, this study focuses on shareholders' perceptions regarding the board of the company. Especially, shareholders' satisfaction expressed

[82] This chapter is based on a working paper titled "Earnings Quality and Shareholders' Satisfaction with the Management and Supervisory Boards—Evidence from German Annual General Meetings", which was presented at the *GSLES Doctoral Workshop* in Oberjoch, the *39th American Accounting Association 2017 Southeast Region Meeting* in Miami, the *40th European Accounting Association Annual Congress* in Valencia, the *79. Wissenschaftliche Jahrestagung des Verbandes der Hochschullehrer für Betriebswirtschaft* in St. Gallen, and the *Annual Accounting Conference* in Berlin. The reasoning, results, and interpretations of this study might change after the submission and publication of this doctoral thesis. The recent version of the paper is available upon request.

at the discharge of the management board and the supervisory board at general meetings of capital market-oriented companies is investigated. In particular, this study is interested in whether earnings quality influences shareholders' satisfaction with the management board and the supervisory board of a company.

The relevance of the question arises again from the existing agency problem. As principals, the shareholders delegate the stewardship of the company to the management, which is the agent and has information advantages. To ensure that the management does not take advantage of the existing information asymmetries, the shareholder elects a supervisory board. The supervisory board takes a monitoring role over the management to represent the interests of shareholders (Eulerich et al. 2014). To mitigate information asymmetries and the resulting potential agency costs, the management must report to both the shareholders and the supervisory board about the stewardship of the company (Healy and Palepu 2001; Lev and Ohlson 1982; Mayhew 2017; Wagenhofer and Ewert 2015). To do so, management must prepare financial statements in accordance with the accounting standards. Only in this case would accounting contribute to solving the agency problem by reducing information asymmetries. However, the accounting standards allow the management accounting discretion, which can be used opportunistically by the management by engaging in earnings management to maximize their benefit at the expense of shareholders (Christie and Zimmerman 1994; He and Yang 2014). Preventing this situation is the responsibility of the supervisory board, which in turn has the opportunity to form an audit committee. The audit committee monitors the financial reporting process and proposes an independent auditor, who is to be elected by the shareholders at the annual general meeting.

Accordingly, the provision of reliable information by management plays an essential role in solving the agency problem. In theory, the quality of the financial statements—i.e., earnings quality—must be adequate from the shareholders' point of view. Moreover, sufficient earnings quality is seen as a fundamental necessity for the functioning of capital markets (Healy and Palepu 2001; Levitt 1998). Thus, numerous studies address the topic of earnings quality, its definition, measurement and influencing factors (Gaynor et al. 2016). In the existing literature, however, there are also voices that attach less importance to earnings quality or to the improvement of earnings quality for shareholders' decision-making (Ball 2013; Zimmerman 2013). Consequently, it would be of particular interest to have some insights into shareholders' view of the importance of earnings quality. Especially, it would be useful to

know whether earnings quality plays such an important role for shareholders that it influences their satisfaction with the company and its representative bodies.

Besides the mechanisms mentioned above to mitigate agency problems, shareholder monitoring is a fundamental aspect of corporate governance (Van der Elst 2011). Shareholder monitoring occurs to a great extent at the company's annual general meetings, where shareholders can vote on corporate decisions and directly communicate with the company's board (Poulsen et al. 2010; Van der Elst 2011). Moreover, the EU (2017) highlighted the relevance of shareholder involvement as a cornerstone of corporate governance by its directive regarding the encouragement of long-term shareholder engagement to ensure the competitiveness of European capital market-oriented companies. Consequently, shareholder voting outcomes at annual general meetings have attracted growing attention in the finance and accounting literature, which is far from being fully exploited in an international context (Cai et al. 2010).

In particular, the annual general meetings in the German context offer an excellent opportunity to gain an understanding of shareholders' opinions. More specifically, the mandatory shareholder voting on the discharge of members of the management board and the supervisory board enables the measurement of shareholders' satisfaction with the company's representative bodies. This is the case despite the generally overwhelming majority of votes supporting the discharge of the board members,[83] as shown by anecdotal evidence from the annual general meetings of Volkswagen AG before and after the diesel car scandal.[84] While the members of the management board and the supervisory board were discharged with almost 100% of all votes in the year before the scandal, the dissenting votes amounted to over 2% in the following year, which represents an immense relative increase and, thus, a clear expression of shareholders' dissatisfaction.[85]

The discharge of the board is obligatory and thus, in contrast to other votes such as the election of the supervisory board, takes place every year. Moreover, this vote, which exists in only a few other countries besides Germany, brings a further advan-

[83] The same can be observed in almost every shareholder vote at annual general meetings in the EU and the U.S. (cf. Cai and Walkling 2011; Mayhew 2017; Mendoza et al. 2010).

[84] See https://www.nytimes.com/2015/09/19/business/volkswagen-is-ordered-to-recall-nearly-500000-vehicles-over-emissions-software.html and https://www.nytimes.com/2015/09/23/business/international/volkswagen-diesel-car-scandal.html; accessed on October 1, 2018.

[85] See https://www.volkswagenag.com/de/InvestorRelations/shareholder-meetings/2015.html and https://www.volkswagenag.com/de/InvestorRelations/shareholder-meetings/agm-2016.html; accessed on October 1, 2018.

tage.[86] It offers the opportunity to differentiate between shareholders' satisfaction with the two parts of the company's board: the management board and the supervisory board. Therefore, this study not only aims to investigate whether earnings quality influences shareholders' satisfaction with a company's management board and supervisory board but also, in particular, distinguishes between the satisfaction with these two bodies of the company in order to investigate the responsibility for earnings quality from shareholders' perspective.

This step, in turn, will allow conclusions to be drawn as to whether shareholders' dissent due to inadequate earnings quality is aimed at the management board—to which they entrusted the stewardship of the company—or to the supervisory board—which, as the shareholders' direct representative, has the task of monitoring the management. Furthermore, this chapter examines how different firm characteristics—i.e., information environment, performance, or audit committee existence—affect shareholders' view on the importance of earnings quality. Finally, knowing whether shareholders consider earnings quality to be relevant and which corporate body shareholders hold responsible for earnings quality will offer useful insights for future research on accounting and the agency problem. Thus, this research project is intended to contribute to an in-depth understanding of shareholders' opinions regarding earnings quality and, ideally, to the justification of accounting and, hence, accounting research.

[86] Examples of countries with a discharge of board members in place are Belgium and the Netherlands (Van der Elst 2011).

6.1 Introduction

Shareholder voting "as an effective mechanism for exercising governance around the world" (Iliev et al. 2015, 2167), has attracted growing attention in recent years (Yermack 2010). Due to the "increased access to the boardroom" (Cai and Walkling 2011, 299), a fundamental understanding of shareholders' opinions has become vital (Krause et al. 2014). In this context, Cai et al. (2010) call for further research on shareholder voting—notably in international settings—to better align owner and manager interests. In addition, shareholders are considered the primary users of financial statements (Khurana and Raman 2006; Lev and Ohlson 1982). Therefore, a systematic understanding of shareholders' preferences regarding financial reporting quality is of particular importance, especially for accounting research.

Given the increased attention devoted to shareholder voting and motivated by the above-mentioned critical issue for the accounting literature, this study answers the question of whether shareholders' confidence in the company and, in particular, its representative bodies is related to earnings quality. To do so, this study considers the German environment, which is characterized by mandatory shareholder ballots on the discharge of the management board and the supervisory board. Since this vote has to take place at every annual general meeting, it provides comprehensive information about shareholders' satisfaction with the company's board and does not face selection bias issues. Moreover, it makes it possible to differentiate between shareholders' opinions about the management board and the supervisory board.

A large part of the accounting literature addresses the definition, measurement, and determinants of earnings quality (cf. Dechow et al. 2010; Gaynor et al. 2016). Moreover, there is an extensive ongoing discussion on the functions and usefulness of accounting earnings (e.g., Ball 2013; Basu et al. 2013; Zimmerman 2013). First, it is vital to understand, whether shareholders' satisfaction is affected by earnings quality. Furthermore, knowing which corporate body shareholders hold responsible for earnings quality would offer an interesting point of orientation for future research and regulation.

Shareholder votes at the annual general meeting have excellent potential to answer these questions because the ballots directly reflect shareholders' opinions regarding the members of the board (Cai et al. 2010). Although it might not be costless for shareholders to vote their shares, it should be less expensive than "voting with their feet" by selling their shares (Admati and Pfleiderer 2009; Dao et al.

2008; Parrino et al. 2003). Although an increasing number of studies have examined agenda items at annual general meetings such as auditor ratification or say-on-pay votes in the last decade,[87] the existing literature on the election—and, particularly, the discharge—of board members should be expanded.[88] Despite the manifold shareholder votes and the opportunities associated with studying them, the literature using European settings almost exclusively considers questions concerning say-on-pay.[89] To overcome this gap, this study exploits the German setting by analyzing the above-mentioned shareholder vote on the discharge of the management board and the supervisory board to provide valuable insights into the relevance of earnings quality to shareholders.

On the basis of a sample of 1,237 observations from companies listed in the German Prime Standard, this study reveals that the magnitude of discretionary accruals—as an inverse measure of earnings quality—is positively related to shareholders' dissatisfaction with the members of the corporate board—measured by votes against the discharge of the management board and the supervisory board at the annual general meeting. Moreover, this association is greater in magnitude and significance in the model examining the discharge of the management board, which could be interpreted to mean that shareholders primarily blame the management board for inferior earnings quality caused by discretionary accruals.

This study contributes to the existing literature in several ways. It extends the emerging research on shareholder voting by examining the hitherto almost unexplored discharge of the management board and the supervisory board in Germany and offers new insights into the determinants of shareholder voting outcomes. Similar to other shareholder votes around the world, firm visibility, performance and ownership characteristics determine the voting outcomes. The significant findings—although, on average, few shareholders vote against the discharge of board

[87] For studies on auditor ratification votes, see, for example, Mishra et al. (2005), Raghunandan (2003), Raghunandan and Rama (2003), or Sainty et al. (2002). For examples of studies on say-on-pay votes, see Cai and Walkling (2011), Ertimur et al. (2013), Ferri and Oesch (2016), Kimbro and Xu (2016), or Krause et al. (2014). For a literature review on say-on-pay votes, see Obermann and Velte (2018).

[88] For studies dealing with the determinants of director elections, see, for example, Cai et al. (2009), Ertimur et al. (2018), Fischer et al. (2009), Gal-Or et al. (2018), or Ye et al. (2013). For a literature review on shareholder voting, see Cai et al. (2010) or Yermack (2010). Also worth mentioning is the comprehensive study by Sauerwald et al. (2016), which examines shareholder votes—including the discharge of the management board—of European listed companies from 15 countries.

[89] For studies using a German setting, see, for example, Eulerich et al. (2014). As an example of studies in the UK, see Ferri and Maber (2013).

members—corroborate the view that shareholder votes represent a valuable indicator of shareholders' satisfaction. The study contributes to the accounting literature by showing that earnings quality is associated with shareholders' satisfaction with the management board and the supervisory board members. The fact that earnings quality seems to affect shareholders' actions emphasizes the relevance of earnings quality. Moreover, the findings indicate that shareholders predominantly hold the management board responsible for earnings quality since the results concerning the discharge of the supervisory board are less pronounced in comparison. Therefore, this study extends the corporate governance literature by providing a deeper understanding of shareholders' perceptions of a company's board.

The remainder of this chapter is structured as follows: The next section describes the specific characteristics of the German setting and the hypothesis development. The research design and the sample selection are illustrated in section 6.3. Section 6.4 presents the descriptive statistics and the multivariate analyses. Section 6.5 contains additional analyses, and the study concludes with a summary and a presentation of its limitations in section 6.6.

6.2 Institutional Background and Hypotheses Development

6.2.1 The Specific Characteristics of the German Setting

In this section, before developing the hypotheses, it is necessary to provide some information about the characteristics of the German setting. According to the German Companies Act and the German Corporate Governance Code, listed German companies have to implement a two-tier board system. This board structure consists of the management board and the supervisory board. Thus, there is a clear separation between the executive board members and the supervisory board, which is advantageous for this study and enables a differentiated analysis. Despite the formal differences between German and U.S. board structures, the two systems are converging.[90]

The main tasks of the management board are the direction and legal representation of the company and the management of the day-to-day operational business (§§ 76 (1) and 78 (1) AktG). Therefore, it is comparable to the executive directors, including the chief executive officer, in the U.S. (Elston and Goldberg 2003). Similar to executives in the U.S., the responsibilities of the management board also include bookkeeping (§ 91 (1) AktG) and the preparation of financial statements (§ 264 (1) German Commercial Code, HGB). Moreover, the management board is obliged to regularly report to the supervisory board (§ 90 (1) AktG).

The supervisory board, which is elected by the shareholders at the annual general meeting,[91] appoints and monitors the management board (§§ 84 (1) and 111 (1) AktG). Thus, the members of the supervisory board are considered the counterpart to the independent board directors in the U.S. (Elston and Goldberg 2003), especially since SOX has enhanced the monitoring role of directors to reduce agency costs.[92] The supervisory board members—who cannot simultaneously be members of the management board (§ 105 (1) AktG)—should represent the interests of the company's shareholders (Cai et al. 2010). The monitoring role of the supervisory board also includes the review of financial statements (§ 171 (1) AktG). In particu-

[90] This is corroborated by the view that the U.S. board system is gradually becoming a two-tier system (Calkoen 2012).

[91] According to § 101 (1) AktG, the members of the supervisory board are elected by the annual general meeting unless they are to be elected as employee supervisory board members in accordance with the German Co-Determination Act. Therefore, it consists of representatives of the shareholders, employees, and occasionally, banks. The members of the supervisory board may hold several mandates and do not work full-time for the company (Albersmann and Hohenfels 2017).

[92] Regarding the monitoring role of the board of directors, please refer to Fama and Jensen (1983).

lar, the supervisory board can establish an audit committee (§ 107 (3) AktG), which monitors target-oriented the financial reporting process and proposes an independent auditor (Albersmann and Hohenfels 2017). Moreover, financial statements are subject to the approval of both the management board and the supervisory board (§ 172 AktG).

An additional task of the chair of the supervisory board is to preside over the annual general meeting, which has to be convened by the management board within eight months after the end of the fiscal year (§§ 120 (1) and 121 (1) AktG). The annual general meeting allows shareholders to fulfill their complementary monitoring role and mitigate agency problems. Among other items, German companies' annual general meetings include votes on the following resolutions (§ 119 (1) AktG): the appropriation of the balance sheet profit, the election of supervisory board members, the election of the auditor and the discharge of the members of the management board and the supervisory board.[93] Thus, the responsibilities of the German annual general meeting and its agenda items—except for the discharge of the board members—are comparable to annual general meetings in other countries.

However, the discharge of the members of the management board and the supervisory board provides an opportunity for exciting research. Because votes to discharge the management board and the supervisory board are separate, it is possible to differentiate between shareholders' opinions about the management board and the supervisory board. Moreover, the discharge of the members of the board is a mandatory item on the agenda of every annual general meeting (§§ 119 (1) number 3 and 120 (1) AktG). Although, or maybe because this vote has no binding legal effects—for example, a change in board members or the exclusion of their liability—it should allow valuable insights into shareholders' perceptions. In sum, the German setting provides a clear measure of shareholders' satisfaction with the management board and the supervisory board.

6.2.2 Earnings Quality and Shareholders' Satisfaction with the Management Board and the Supervisory Board

In their literature review, Dechow et al. (2010, 344) define earnings quality and offer the following insight: "Higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker." Accordingly, high quality financial statements

[93] Furthermore, it includes situational or voluntary agenda items such as say-on-pay votes.

should be of great importance to shareholders—who are the main decision-makers (Khurana and Raman 2006; Lev and Ohlson 1982)—as they rely on decision-useful information and are likely to be willing to invest only in companies with reliable accounting (Levitt 1998). Moreover, only reliable accounting information can mitigate the agency costs entailed in information asymmetries—due to the separation of ownership and control—between the company's representative bodies and its shareholders. The earnings number is a material source of information (Basu et al. 2013; Nichols and Wahlen 2004), and shareholders should be interested in having high earnings quality because it allows them to make the best possible decisions.

Contradicting this perspective, Ball (2013) raises serious doubts regarding whether financial statements provide new decision-useful information for shareholders. Furthermore, Zimmerman (2013) states that earnings quality has, at best, a second-order effect on firm value. Healy and Palepu (2001) argue that accounting decisions may not affect shareholders' wealth, which could indicate that earnings quality might be of minor importance to shareholders. However, decision-usefulness as a criterion for earnings quality is not constrained to the consideration of valuation decisions (Dechow et al. 2010). Accounting numbers, such as earnings, have further functions: for example, they play a fundamental role in contracting. Hence, there are substantial reasons that earnings quality should be relevant to shareholders' satisfaction and, moreover, sufficiently important to be reflected in shareholders' actions.

A major channel for shareholders to express their satisfaction is shareholder voting at the annual general meeting. Thus, the accounting literature, as well as other studies, have examined these shareholder votes to draw conclusions about shareholders' preferences. Studies in accounting primarily focus on auditor ratification votes. The empirical evidence reveals that shareholders' satisfaction with the auditor is related to auditor size and independence (Mishra et al. 2005; Raghunandan 2003; Sainty et al. 2002). Although evidence on the outcome of financial statements is rare and limited to financial restatements (Liu et al. 2009) or going concern opinions (Sainty et al. 2002), it provides first indications that shareholders might consider earnings quality to be relevant. In contrast, Cunningham (2017) observes no significant association between the results of auditor ratification votes and restatements. Though, higher abnormal discretionary accruals lead to a higher likelihood to receive an "against" recommendation from the proxy advisor (Cunningham 2017). The proxy advisors, in turn, influence the voting behavior of the sharehold-

ers (Cunningham 2017).[94] In addition, the influence of earnings management on shareholders' dissent is supported by the findings of Kimbro and Xu (2016).

Nevertheless, almost no studies specifically address the question of whether earnings quality affects shareholders' satisfaction with the company's board and, in particular, whether the management board and the supervisory board are held responsible for earnings quality.[95] Two exceptions dealing with the topic of director election with a focus on earnings quality are Gal-Or et al. (2018) and Ye et al. (2013). Ye et al. (2013) investigate director election votes and their association with material weaknesses in internal controls and financial restatements in SOX Section 404 reports.[96] Gal-Or et al. (2018) examine determinants of shareholder elections of audit committee members.[97] Although these studies might indicate that earnings quality influences shareholders' actions, the empirical findings relate primarily to shareholders' satisfaction with the audit committee. Thus, further research is needed to better understand shareholders' related opinions. The German setting with the corresponding benefits described above provides a perfect opportunity to conduct such research.

Assuming that earnings quality is relevant to shareholders, it remains unclear which body of the board shareholders hold accountable for insufficient earnings quality. The main reasons why shareholders seem likely to blame the members of the management board for low earnings quality can be derived from the role of the management board. The management board is responsible for leading the company and preparing financial statements. In this context, the accounting standards allow the management certain discretion that they can exploit either for the benefit of the

[94] Regarding the influence of proxy advisors in the European context, please refer to Hitz and Lehmann (2017).

[95] In some director election papers, only a control variable indicating accounting restatements is included (Cai et al. 2009; Ertimur et al. 2018). However, earnings quality is not the focus of the mentioned studies, and this approach allows only a black-and-white view on shareholders' opinions.

[96] The authors observe a positive association between votes withheld from management director election and internal control problems. In contrast, financial restatements influence solely the results of audit committee directors' votes.

[97] The authors provide evidence that elections of audit committee members are influenced by accounting expertise and the ability to monitor the financial reporting process. In particular, they find an influence of restatements and excessive audit fees on the voting outcome but observe no significant effect regarding discretionary accruals. However, Gal-Or et al. (2018) focus mainly on audit committee members and are interested in the variation across individual independent directors. In contrast, the present study makes use of the advantageous German setting and analyzes shareholders' satisfaction with the management board and the supervisory board as a whole.

shareholders or opportunistically (He and Yang 2014; Watts and Zimmerman 1990). Therefore, the management board is responsible for installing a functioning internal control system and ensuring high earnings quality (Cohen et al. 2004). Furthermore, the management board is obliged to sign a balance sheet oath (§ 264 (2) HGB).

For a long time now, the management board's compensation has been frequently conditional on the company's economic success—measured by accounting earnings—to mitigate the agency problem (Ball 2009; Watts and Zimmerman 1978; Watts and Zimmerman 1990). However, this approach could in turn raise agency issues in terms of moral hazard. Thus, the management board has not only the opportunity but also the incentives to exercise discretion in the application of accounting in their favor (Dechow et al. 1996; He and Yang 2014; Healy 1985; Holthausen et al. 1995). In turn, earnings management should create shareholder dissatisfaction since—according to Haw et al. (2011, 517)—"it is a practice that potentially undermines the credibility of financial statements, and such statements are a critical attribute of useful accounting information in well-functioning capital markets."

Ultimately, and despite the existence of the supervisory board and external auditors, the level of earnings quality should affect shareholders' satisfaction with the management board. To examine this presumption, the following alternative hypothesis is tested:

***H1**: There is a positive association between earnings quality and shareholders' satisfaction with the management board.*

To ensure that the management board is not exploiting information asymmetries, (independent) supervisory board members are considered a fundamental component of corporate governance and influence the quality of financial information (Carcello et al. 2011; Eisenhardt 1989; Gaynor et al. 2016; Healy and Palepu 2001). Within the framework of agency theory, it is the task of the shareholder-appointed supervisory board to alleviate agency problems due to the separation of ownership and control (He and Yang 2014; Healy and Palepu 2001; Mayhew 2017). In particular, the supervisory board should constrain opportunistic earnings management by the management board (Albersmann and Hohenfels 2017). Therefore, it could also be argued that shareholders might hold the supervisory board accountable for issues related to earnings quality. The supervisory board members are ultimately the representatives of the shareholders and should execute their monitoring function

conscientiously to effectively reduce information asymmetries (Balachandran et al. 2012; Cai et al. 2010; Drymiotes and Sivaramakrishnan 2012; Fischer et al. 2009).[98] Their area of responsibility includes the review and approval of financial statements explicitly. Furthermore, the supervisory board has to ensure the independence of the external auditor. To do so, they have the authority to create an audit committee, which oversees the financial reporting and internal control process.

It is hypothesized that shareholders will hold their representatives—the supervisory board—responsible for earnings quality if they fail to safeguard shareholders' welfare by mitigating agency problems. Therefore, the second hypothesis is formulated in its alternative form as follows:

***H2**: There is a positive association between earnings quality and shareholders' satisfaction with the supervisory board.*

[98] Tian (2014) presents a caveat to this view.

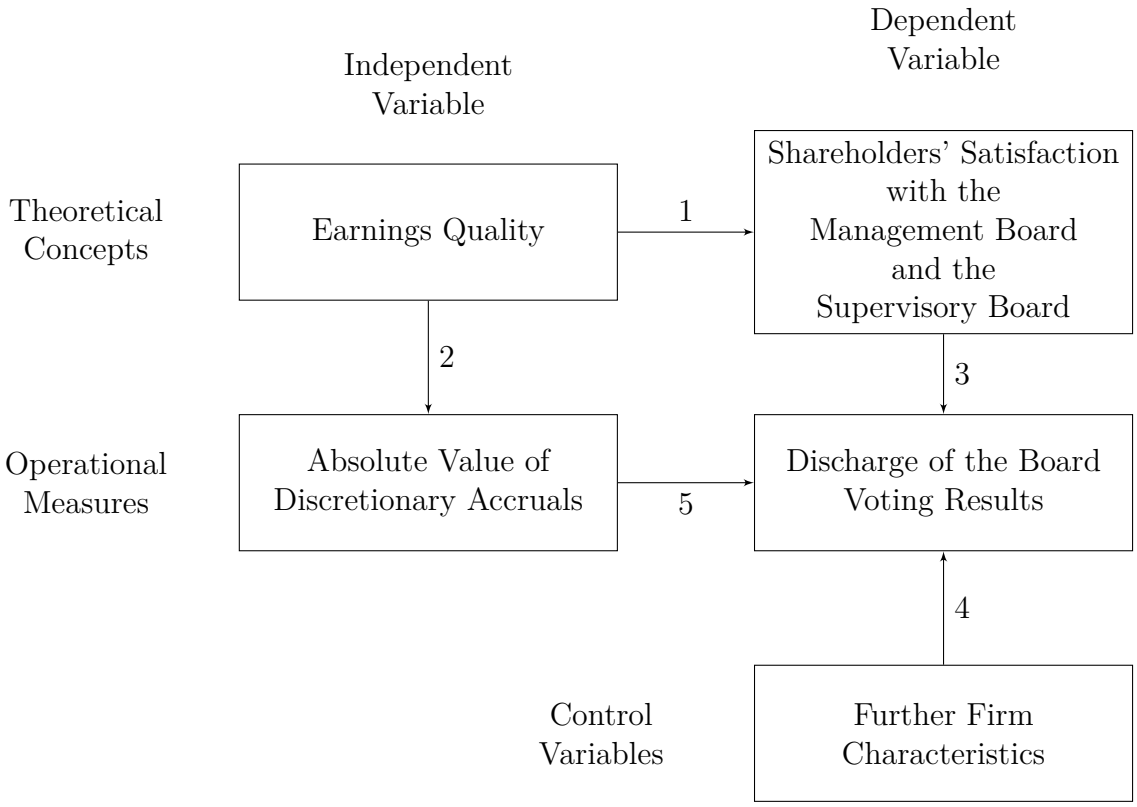
6.3 Research Design and Sample Selection

6.3.1 Research Design

6.3.1.1 Conceptual Model

The conceptual model of this study is exemplified by the predictive validity framework in Figure 6.1 (cf. Kinney and Libby 2002). The primary objective of this study is to answer the question of whether earnings quality is related to shareholders' satisfaction with the management board and the supervisory board (link 1). To test this relation (link 5), empirical proxies for the theoretical concepts of earnings quality and shareholders' satisfaction with the management board and the supervisory board are needed. The measure of earnings quality is based on discretionary accruals (link 2). Shareholders' satisfaction with the members of the board is measured by voting results at the annual general meeting (link 3). Both proxies, as well as additional control variables (link 4), are discussed in detail in the following subsections. Based on the empirical model in link 5, the hypothesized association can be tested.

Figure 6.1: Conceptual Model: Earnings Quality and Shareholders' Satisfaction with the Management Board and the Supervisory Board



6.3.1.2 Measure of Earnings Quality

First, a proxy for earnings quality is needed to test the hypotheses. In general, earnings consist of two components: accruals and cash flows. The consideration of accruals differentiates accrual accounting from pure cash flow accounting (Francis et al. 2005). Accruals can be subdivided into discretionary and non-discretionary (normal) components. Whereas normal accruals might reflect the company's real underlying economics, discretionary accruals are considered an undesirable distortion of the information provided by reported earnings and, thus, a surrogate for poor earnings quality (Dechow et al. 2010). The measures of discretionary accruals are intended to directly capture managerial discretion and accounting system issues, and therefore, they are of particular importance for accounting research (Dechow et al. 2010). In this study, earnings quality is proxied by absolute discretionary accruals taken from the performance-adjusted modified Jones model introduced by Kothari et al. (2005), as is common in

the accounting literature. The normal portion of accruals is estimated based on the following cross-sectional industry-year-specific regression model in Equation 6.1:

$$\frac{ACC_t}{TA_{t-1}} = \alpha_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + \beta_4 ROA_{t-1} + \varepsilon_t \,, \quad (6.1)$$

where ACC is total accruals, calculated as earnings before extraordinary items minus cash flow from operations, TA is total assets, ΔREV is the change in revenues, ΔREC equals the change in accounts receivable, PPE is net property, plant, and equipment, and ROA is calculated as net income before extraordinary items scaled by lagged total assets.

Following Kothari et al. (2005), the intercept is included to mitigate omitted variable problems, account for heteroscedasticity, and increase test power.[99] All regression models are estimated for each industry-year combination using the Fama and French 12-industry classification,[100] where a minimum of 10 industry-year observations is required.[101] The absolute value of the regression's residual ($DACC$) is used to measure earnings quality.

6.3.1.3 Measure of Shareholders' Satisfaction with the Management Board and the Supervisory Board

Although scant, prior research has made increasingly frequent use of shareholders' voting decisions to proxy for their satisfaction (Cai et al. 2009; Sainty et al. 2002; Ye et al. 2013). In sum, the findings of the previous literature indicate that voting results should, in general, reflect shareholders' satisfaction. According to Ye et al. (2013), voting results represent a direct measure of shareholders' confidence in the company and its representative bodies. Furthermore, the costs shareholders face when voting their shares should be relatively low (Dao et al. 2008). This study focuses on shareholders' satisfaction with the management board and the supervisory board, which is obtained from the shareholder vote on the discharge of the members of the management board and those of the supervisory board, respectively.

[99] Re-estimating the model with no constant does not alter the results presented later in the study.

[100] See `http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html`; accessed on October 1, 2018.

[101] Using a lower (higher) threshold of 5 (20) observations in an industry-year combination does not affect the findings of this study. The same applies if a minimum of 15 observations is required following Bruynseels and Cardinaels (2014).

The results of the discharge votes—which are held at the annual general meeting—are chosen because they make it possible to capture satisfaction with both components of the German board system, while only the supervisory board is elected by shareholders. In contrast to the supervisory board election, the discharge of the members of the management board and the supervisory board has to take place every year. This helps to avoid sample selection bias issues and represents an even more important advantage of the German setting. Since this mandatory item on the agenda of the annual general meeting has no binding consequences, it is a clear measure of shareholders' satisfaction. For the empirical analyses, the natural logarithm of 1 plus the percentage of votes against the discharge of the management board ($VOTEMB$) and the supervisory board ($VOTESB$) is used to measure shareholders' (dis)satisfaction.[102] The logarithm transformation is implemented because of the considerable skewness of the voting results, and is common in the prior voting literature (Dao et al. 2008; Hermanson et al. 2009). The modification (natural logarithm of 1 plus the percentage of votes) helps to avoid truncation of the variables at the minimum result of zero votes against the discharge of the board.

6.3.1.4 Model Specification and Control Variables

Shareholders' satisfaction with the management board and the supervisory board members might be influenced by numerous factors. Therefore, control variables are introduced following the voting literature. Cai et al. (2009) provide evidence that directors of poorly performing companies receive fewer supporting votes in uncontested director elections. In turn, shareholders' dissatisfaction with the board due to unsatisfactory performance can lead to protest votes (Balachandran et al. 2012; Del Guercio et al. 2008). Therefore, the industry-adjusted earnings before interest, taxes, depreciation, and amortization scaled by lagged total assets ($ADJROA$) introduced by Cai et al. (2009) is included in the regression models to control for accounting-based performance. The industry-adjusted one-year stock return ($ADJRET$) should account for market-based performance (Dao et al. 2008; Raghunandan 2003).[103] Additionally, a loss indicator ($LOSS$; Hermanson et al. 2009), book-to-market value (BTM), an indicator variable for a negative book-

[102] In rare cases of an individual discharge of board members, the mean value of votes against the discharge is used to calculate the dependent variables. The findings of this study are not sensitive to this choice and hold when taking the median observation.

[103] Following the literature, $ADJROA$ and $ADJRET$ are adjusted by subtracting the respective industry median. The choice of the industry mean does not change the later findings.

to-market value (*BTMNEG*), and the Altman's Z-score (*ALTZ*) based on Altman (1968) are included in the model. To address the general mood in the run-up to the vote, the cumulative abnormal stock return (*CAR*) during the week before the annual general meeting is introduced.[104] The variable *DELAY* is introduced to indicate whether the annual general meeting takes place later than usual since an unexpected delay typically indicates some disagreements or problems within the company (Knechel and Vanstraelen 2007). This situation occurred, for example, when Volkswagen AG postponed its annual general meeting following the diesel car scandal.[105] Factors directly related to the voting at the annual general meeting such as voter turnout (*TURNOUTMB*/*TURNOUTSB*)—equaling the represented capital entitled to vote—or cases of an individual discharge of board members (*INDDMB*/*INDDSB*) might also influence the voting outcome (Sauerwald et al. 2016). The natural logarithm of market value of equity (*SIZE*) is included to control for firm size (Balachandran et al. 2012).[106] Larger firms receive greater public attention and, therefore, are more likely to be subject to "vote-no" campaigns (Cai and Walkling 2011; Liu et al. 2009; Sauerwald et al. 2016). The same applies to firms listed in one of the largest German equity indices, for which the indicator variables *DAX*, *MDAX*, *SDAX*, and *TECDAX* are introduced. These variables can also be regarded as a measure of corporate governance since companies listed in one of those indices have to act in compliance with certain standards (Ratzinger-Sakel 2013). Another measure of firm visibility is the age of the firm (*AGE*; Kong et al. 2017). Finally, financial leverage (*LEV*) and total strategic share holdings (*TSH*) are also controlled for because ownership characteristics should influence the outcome of shareholder votes (Dao et al. 2008; Gordon and Pound 1993; Raghunandan 2003; Sauerwald et al. 2016; Shleifer and Vishny 1997).[107]

[104] *CAR* is the cumulative abnormal stock return over the Prime All Share return computed for the 5-day window, i.e., -5 trading days (one week) to -1 trading day relative to the date of the annual general meeting. The market model parameters are estimated over the 180-day window ending 21 trading days before the date of the annual general meeting. In additional robustness checks, the event window is extended to -20 trading days (one month) relative to the date of the annual general meeting, and the annual general meeting date is included in the event window. Furthermore, the CDAX instead of the Prime All Share is chosen as the benchmark index.

[105] See `https://www.nytimes.com/2016/02/06/business/international/volkswagen-earnings-emissions.html`; accessed on October 1, 2018.

[106] The use of other proxies for firm size—i.e., the natural logarithm of total assets, revenues or employees—does not alter the conclusions stated later in the study.

[107] Both variables (*LEV* and *TSH*) are also used by Krishnan and Ye (2005) as proxies for agency costs.

Ultimately, the association between the empirical measures of earnings quality and shareholders' satisfaction with the members of the management board and the supervisory board can be observed. Therefore, the following model based on the variables described above is tested:

$$\begin{aligned} VOTE_{it} = \alpha_0 &+ \beta_1 DACC_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LOSS_{it} + \beta_5 ADJROA_{it} \\ &+ \beta_6 ADJRET_{it} + \beta_7 CAR_{it} + \beta_8 ALTZ_{it} + \beta_9 LEV_{it} + \beta_{10} BTM_{it} \\ &+ \beta_{11} BTMNEG_{it} + \beta_{12} TSH_{it} + \beta_{13} TURNOUT_{it} + \beta_{14} INDD_{it} \\ &+ \beta_{15} DELAY_{it} + \beta_{16} DAX_{it} + \beta_{17} MDAX_{it} + \beta_{18} SDAX_{it} \\ &+ \beta_{19} TECDAX_{it} + \sum_{j=20}^{27} \beta_j IND_{it} + \sum_{j=28}^{32} \beta_j YEAR_{it} + \varepsilon_{it}\,, \end{aligned} \tag{6.2}$$

where *VOTEMB* (*VOTESB*), *TURNOUTMB* (*TURNOUTSB*), and *INDDMB* (*INDDSB*) are included in the management board (supervisory board) regression. The models include industry and year fixed effects—*IND* represents eight industry dummies;[108] *YEAR* is a set of five fiscal year dummies[109]—and are estimated with OLS regressions. Moreover, standard errors are clustered by firm.[110] All continuous independent variables throughout the study are winsorized at the 1st and 99th percentiles to mitigate the outlier problem.[111] Since the author is interested in substantial or even extreme shareholder dissatisfaction and winsorization would diminish variation in the dependent variable, the voting results are not winsorized in the main models (Cunningham 2017).[112] Table 6.1 provides information about the variable definitions.

[108] To compute industry fixed effects, the 12-industry classification by Fama and French (`http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html`; accessed on October 1, 2018) is used. The results presented later remain unchanged if the two-digit SIC code industry classification is used or if omitting industry fixed effects.

[109] Using dummies indicating the year in which the annual general meeting took place would not change the conclusions stated later in the study. The same applies if year-quarters are included in the model regardless of whether they refer to the fiscal year-end or the annual general meeting.

[110] This study's findings remain robust if standard errors are clustered two-way by firm and time.

[111] The findings of this study presented later are not altered using yearly winsorization of the continuous variables or winsorization at the 2.5th and 97.5th percentiles.

[112] However, the evidence presented later remains unchanged if *VOTEMB* and *VOTESB* are winsorized, too.

Table 6.1: Variable Definitions

Variable	Definition
	Dependent Variables
VOTEMB	Natural logarithm of 1 plus the percentage of votes against the discharge of the management board.
VOTESB	Natural logarithm of 1 plus the percentage of votes against the discharge of the supervisory board.
	Variable of Interest
DACC	Absolute value of discretionary accruals scaled by lagged total assets, estimated based on the performance-adjusted modified Jones model introduced by Kothari et al. (2005).
	Control Variables
SIZE	Natural logarithm of the market value of equity.
AGE	Natural logarithm of the firm's age in years, calculated based on the date the firm was incorporated in Worldscope.
LOSS	Indicator variable equal to 1 if the firm has negative earnings before interest, taxes, depreciation, and amortization, and 0 otherwise.
ADJROA	Earnings before interest, taxes, depreciation, and amortization scaled by lagged total assets adjusted by the industry median.
ADJRET	One-year stock return adjusted by the industry median.
CAR	Cumulative abnormal stock return over the Prime All Share return computed for the 5-day window, i.e., -5 trading days to -1 trading day relative to the date of the annual general meeting. The calculation is based on the market model estimated over the 180-day window ending 21 trading days before the date of the annual general meeting.
ALTZ	Altman's Z-score based on Altman (1968).
LEV	Leverage, defined as total debt divided by total assets.
BTM	Book-to-market value, calculated as book value divided by market value of common equity at the date of the annual general meeting for firms with positive book-to-market values, and 0 otherwise.
BTMNEG	Indicator variable equal to 1 if the firm has a negative book-to-market value, and 0 otherwise.
TSH	Percentage of total strategic share holdings of 5% or more at the date of the annual general meeting.
TURNOUTMB	Percentage of voter turnout at the discharge of the management board.
TURNOUTSB	Percentage of voter turnout at the discharge of the supervisory board.
INDDMB	Indicator variable equal to 1 in cases of an individual discharge of the members of the management board, and 0 otherwise.
INDDSB	Indicator variable equal to 1 in cases of an individual discharge of the members of the supervisory board, and 0 otherwise.
DELAY	Indicator variable equal to 1 if the annual general meeting takes place 30 days after the end of the median period of time between annual general meeting and fiscal year-end of the firm, and 0 otherwise.
DAX	Indicator variable equal to 1 if the firm is listed in the DAX, and 0 otherwise.
MDAX	Indicator variable equal to 1 if the firm is listed in the MDAX, and 0 otherwise.
SDAX	Indicator variable equal to 1 if the firm is listed in the SDAX, and 0 otherwise.
TECDAX	Indicator variable equal to 1 if the firm is listed in the TecDAX, and 0 otherwise.
	Fixed Effects Variables
IND	Set of eight industry dummies according the 12-industry classification by Fama and French (`http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html`; accessed on October 1, 2018).
YEAR	Set of five year dummies.

Table 6.1: Variable Definitions (continued)

Variable	Definition
	Additional Analyses Variables
TACC	Absolute value of total accruals, calculated as earnings before extraordinary items minus cash flow from operations scaled by lagged total assets.
FCERROR	Absolute value of the mean analysts' earnings per share forecast error of the respective fiscal year scaled by price per share.
EPS1SD	Standard deviation of the one-year-forward analysts' earnings per share forecasts at the date of the annual general meeting scaled by price per share.
AC	Indicator variable equal to 1 if an audit committee exists, and 0 otherwise.
MBSIZE	Number of management board members.
SBSIZE	Number of supervisory board members.
MEETINGS	Number of supervisory board meetings.
SOP	Indicator variable equal to 1 if the firm has adopted a say-on-pay vote in one of the three most recent annual general meetings, and 0 otherwise.
CGDEVIATION	Number of deviations from the German Corporate Governance Code (`https://www.dcgk.de/en/code.html`; accessed on October 1, 2018).
POSRET	Indicator variable equal to 1 if the firm has a higher one-year stock return than the industry median, and 0 otherwise.
ANALYST	Natural logarithm of 1 plus the number of analysts following the firm.

Note: This table presents the variable definitions.

6.3.2 Sample Selection

The data on the voting results at the annual general meetings are hand-collected by the author, which was possible because listed companies are obligated to publish the voting results of the annual general meeting on their website within one week (§ 130 (6) AktG). The remaining data for the main empirical analyses, including the determination of discretionary accruals, are obtained from Datastream and Worldscope.[113] The sample contains the German companies listed in the German Prime Standard, the market index with the highest publicity and transparency standards (Leuz 2003). This ensures comparability across the companies in the sample.

During the annual general meeting seasons from 2010 through 2015, 466 different companies were listed in the German Prime Standard, resulting in an initial sample of 2,196 firm-year observations.[114] After deleting firm-years from foreign companies, double listings, and preference shares with restricted voting rights, 1,874 firm-years remain. Moreover, 185 firm-year observations are excluded from companies that were not listed in the German Prime Standard at the date of the annual general meeting or for which an unambiguous matching of the annual general meeting and the corresponding IFRS financial statement was not possible.[115] Subsequently, all financial firm-years (SIC codes 6000–6799) are dropped, resulting in a loss of 206 observations. Moreover, 35 firm-years with inadequate voting data are excluded. This also includes firm-years where the voter turnout was not observable. Finally, in total, 211 firm-years are lost because of a lack of data in Worldscope or Datastream and due to the requirement of at least 10 observations in each industry-year combination to determine discretionary accruals. The final sample consists of 1,237 firm-year observations from 278 different companies from 9 of the 12 Fama and French industry portfolios. Table 6.2 outlines the detailed sample selection process (Panel A) and the composition by industry (Panel B).

[113] I/B/E/S is the source of the analyst forecast data used throughout the additional analyses and also causes a decline in the sample size observable in some of the regressions presented in Table 6.6, Table 6.7, Table 6.9, and Table 6.10. The data to generate the corporate governance variables are hand-collected from financial statements and declarations on the German Corporate Governance Code.

[114] Thus, the sample period starts after the financial crisis and changes in German accounting regulations (Bigus and Hillebrand 2017).

[115] This also includes very few cases of gaps between the fiscal year-end and the annual general meeting of more than one year.

Table 6.2: Sample Selection and Sample Composition by Industry

Panel A: Sample Selection

	Firm-Years
Initial sample of all constituents of the German Prime Standard for the calendar years 2010, 2011, 2012, 2013, 2014 and 2015.	2,196
Less: Firm-years from foreign companies (ISIN country code other than "DE").	185
Less: Firm-years from preference shares and double listings.	137
	1,874
Less: Firm-years from companies that were not listed in the German Prime Standard at the date of the annual general meeting.	120
Less: Firm-years for which an unambiguous matching of the annual general meeting to the corresponding IFRS financial statement was not possible.	65
	1,689
Less: Financial firm-years (SIC codes 6000–6799).	206
	1,483
Less: Firm-years with inadequate voting data.	35
Less: Firm-years with a lack of data in Worldscope.	48
Less: Firm-years with a lack of data in Datastream.	19
Less: Firm-years of industry-year combinations with less than 10 observations.	144
Final sample	**1,237**

Panel B: Sample Composition by Industry

Industry Classification	**Firm-Years**	**Sample (%)**
Consumer Non-Durables	43	3.48
Consumer Durables	64	5.17
Manufacturing	279	22.55
Chemicals and Allied Products	20	1.62
Business Equipment	375	30.32
Telephone and Television Transmission	10	0.81
Wholesale, Retail, and Some Services	112	9.05
Healthcare, Medical Equipment, and Drugs	132	10.67
Other	202	16.33
Total	**1,237**	**100**

Note: This table presents the sample selection procedure (Panel A) and the sample composition by industry (Panel B).

6.4 Empirical Analyses

6.4.1 Descriptive Statistics

Table 6.3 presents the descriptive statistics. The untransformed mean percentage of votes against the discharge of the management board is 2.05%, and the median observation is 0.12%. The disapproval obtained from the discharge of the supervisory board members, with a mean value of 2.52% and a median value of 0.31%, is somewhat higher. Although comparison with other shareholder votes around the world should be treated with caution, similar to director elections or auditor ratification votes in the U.S., the percentage of votes supporting the discharge of board members is very high, and there seems to be no substantial variation in the votes (Cai et al. 2009; Dao et al. 2008; Raghunandan 2003; Sainty et al. 2002; Ye et al. 2013). Moreover, the voting results exhibit relatively high skewness, which is also in line with the voting literature and supports the logarithm transformation of the dependent variables *VOTEMB* and *VOTESB*.

The mean value of the absolute magnitude of discretionary accruals—scaled by lagged total assets—is 0.056. The mean untransformed market value equals 3.286 billion €. The average firm is covered in Worldscope for approximately 16 years, and 23.52% of the sample make losses. The mean earnings before interest, taxes, depreciation, and amortization scaled by lagged total assets equals 0.098. The median one-year stock return totals 12.83%, which is lower than the mean value of 18.31%. The mean and median cumulative abnormal stock return during the month before the annual general meeting are both close to zero. The median value of *ALTZ* equals 2.810, which is just below the critical threshold of 2.99 to be considered financially "safe" according to Altman (1968). The percentage of strategical holdings of a median firm-year observation is 44.00%, and the mean value of *LEV* totals 18.17%. The book-to-market value of an average firm totals 0.677, and 1.70% of the observations have a negative book-to-market value. The mean voter turnouts during the discharge of the management board and the supervisory board are both slightly above 50%, which is in line with the findings from prior literature (Mendoza et al. 2010; Schmidt 2017). Both types of board members face individual discharge approximately every tenth annual general meeting. Approximately half of all companies are listed in one of the primary indices: DAX, MDAX, SDAX, and TecDAX.

Table 6.3: Descriptive Statistics

	Mean	**Std. Dev.**	**25%**	**50%**	**75%**	**Min.**	**Max.**
VOTEMB	2.054	7.739	0.012	0.117	0.832	0.000	99.806
VOTESB	2.518	7.266	0.032	0.307	1.797	0.000	99.806
DACC	0.056	0.055	0.017	0.039	0.076	0.001	0.285
SIZE	3.286	10.525	0.065	0.224	1.429	0.007	70.613
AGE	15.771	10.238	9.934	13.255	17.485	1.507	42.367
LOSS	0.235	0.424	0.000	0.000	0.000	0.000	1.000
ROA	0.098	0.163	0.065	0.116	0.162	-0.660	0.484
RET	0.183	0.435	-0.097	0.128	0.401	-0.716	1.778
CAR	0.001	0.045	-0.021	-0.001	0.023	-0.128	0.170
ALTZ	3.226	3.676	1.842	2.810	4.013	-10.989	19.740
LEV	0.182	0.157	0.045	0.159	0.269	0.000	0.735
BTM	0.677	0.529	0.351	0.546	0.847	0.000	3.333
BTMNEG	0.017	0.129	0.000	0.000	0.000	0.000	1.000
TSH	40.959	26.254	18.000	44.000	61.000	0.000	90.000
TURNOUTMB	51.721	23.024	35.840	51.892	69.790	2.020	93.960
TURNOUTSB	51.672	21.984	36.470	52.030	67.910	3.650	93.026
INDDMB	0.108	0.311	0.000	0.000	0.000	0.000	1.000
INDDSB	0.105	0.307	0.000	0.000	0.000	0.000	1.000
DELAY	0.051	0.220	0.000	0.000	0.000	0.000	1.000
DAX	0.080	0.271	0.000	0.000	0.000	0.000	1.000
MDAX	0.158	0.365	0.000	0.000	0.000	0.000	1.000
SDAX	0.117	0.322	0.000	0.000	0.000	0.000	1.000
TECDAX	0.105	0.307	0.000	0.000	0.000	0.000	1.000
n	1,237						

Note: This table presents the descriptive statistics for the pooled data. All continuous variables other than *VOTEMB* and *VOTESB* are winsorized at the 1st and 99th percentiles. Variable definitions: *VOTEMB* represents the untransformed percentage of votes against the discharge of the members of the management board. *VOTESB* equals the untransformed percentage of votes against the discharge of the members of the supervisory board. *SIZE* equals the untransformed market value of equity in billion €. *AGE* represents the untransformed age of the firm in years, based on the date the firm was incorporated in Worldscope. *ROA* represents unadjusted earnings before interest, taxes, depreciation, and amortization scaled by lagged total assets. *RET* represents the unadjusted recent one-year stock return at the date of the annual general meeting. All other variables are as defined in Table 6.1.

Table 6.4 shows the Pearson product-moment correlation coefficients. The correlation coefficients of the independent variables do not lead to serious concerns about collinearity.[116] However, the proxy for firm size (*SIZE*) is noticeably related to firm age (*AGE*), *LOSS*, and the membership variables *DAX* and *MDAX*. Furthermore, *ADJROA* is related to the indicator *LOSS* and *ALTZ*. Nevertheless, the VIFs support the conclusion that there is no material issue of collinearity, as all VIFs are considerably below the critical value of 10.[117]

[116] There is a strong correlation between the both (dis)satisfaction measures *VOTEMB* and *VOTESB*. The same applies to *TURNOUTMB* (*INDDMB*) and *TURNOUTSB* (*INDDSB*). Because they are not simultaneously included in the model, this does not represent a problem.

[117] The mean VIFs of the main models explaining the discharge of the management board and the supervisory board are 2.42.

Table 6.4: Pearson Product-Moment Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) *VOTEMB*	1.000											
(2) *VOTESB*	0.689	1.000										
	(0.000)											
(3) *DACC*	0.182	0.070	1.000									
	(0.000)	(0.014)										
(4) *SIZE*	-0.101	0.011	-0.284	1.000								
	(0.000)	(0.686)	(0.000)									
(5) *AGE*	0.028	0.134	-0.174	0.398	1.000							
	(0.320)	(0.000)	(0.000)	(0.000)								
(6) *LOSS*	0.249	0.158	0.213	-0.313	-0.109	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							
(7) *ADJROA*	-0.239	-0.134	-0.160	0.268	0.070	-0.632	1.000					
	(0.000)	(0.000)	(0.000)	(0.000)	(0.014)	(0.000)						
(8) *ADJRET*	-0.210	-0.132	-0.105	0.152	0.068	-0.240	0.271	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)					
(9) *CAR*	0.005	0.007	0.041	-0.043	-0.028	0.003	-0.004	-0.054	1.000			
	(0.869)	(0.814)	(0.151)	(0.127)	(0.334)	(0.915)	(0.890)	(0.057)				
(10) *ALTZ*	-0.219	-0.113	-0.054	0.140	-0.037	-0.244	0.376	0.132	0.034	1.000		
	(0.000)	(0.000)	(0.057)	(0.000)	(0.192)	(0.000)	(0.000)	(0.000)	(0.235)			
(11) *LEV*	0.151	0.081	-0.021	0.136	0.086	0.097	-0.074	-0.073	-0.021	-0.373	1.000	
	(0.000)	(0.004)	(0.451)	(0.000)	(0.003)	(0.001)	(0.009)	(0.010)	(0.463)	(0.000)		
(12) *BTM*	0.193	0.063	0.040	-0.250	-0.192	0.088	-0.094	-0.273	0.065	-0.156	0.025	1.000
	(0.000)	(0.027)	(0.159)	(0.000)	(0.000)	(0.002)	(0.001)	(0.000)	(0.023)	(0.000)	(0.386)	
(13) *BTMNEG*	0.151	0.042	0.156	-0.156	-0.046	0.193	-0.318	-0.081	-0.031	-0.315	0.302	-0.144
	(0.000)	(0.136)	(0.000)	(0.000)	(0.103)	(0.000)	(0.000)	(0.004)	(0.271)	(0.000)	(0.000)	(0.000)
(14) *TSH*	-0.191	-0.225	-0.023	-0.118	-0.107	-0.050	0.065	0.002	0.002	0.084	-0.037	0.027
	(0.000)	(0.000)	(0.427)	(0.000)	(0.000)	(0.079)	(0.021)	(0.945)	(0.938)	(0.003)	(0.192)	(0.351)
(15) *TURNOUTMB*	-0.223	-0.071	-0.212	0.315	0.160	-0.092	0.076	0.087	-0.029	0.042	0.026	-0.216
	(0.000)	(0.013)	(0.000)	(0.000)	(0.000)	(0.001)	(0.007)	(0.002)	(0.305)	(0.143)	(0.354)	(0.000)
(16) *TURNOUTSB*	-0.113	-0.195	-0.103	0.200	-0.084	-0.118	0.156	0.058	-0.006	0.118	-0.010	-0.056
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.043)	(0.845)	(0.000)	(0.721)	(0.050)
(17) *INDDMB*	0.219	0.135	0.060	0.061	0.119	0.150	-0.124	-0.024	0.036	-0.161	0.129	0.012
	(0.000)	(0.000)	(0.036)	(0.031)	(0.000)	(0.000)	(0.000)	(0.402)	(0.208)	(0.000)	(0.000)	(0.671)
(18) *INDDSB*	0.088	0.118	0.003	0.113	0.130	0.077	-0.043	0.007	0.009	-0.104	0.049	0.008
	(0.002)	(0.000)	(0.918)	(0.000)	(0.000)	(0.007)	(0.130)	(0.801)	(0.761)	(0.000)	(0.087)	(0.765)
(19) *DELAY*	0.170	0.085	0.063	-0.185	-0.042	0.175	-0.203	-0.075	-0.040	-0.139	0.081	0.043
	(0.000)	(0.003)	(0.026)	(0.000)	(0.141)	(0.000)	(0.000)	(0.008)	(0.157)	(0.000)	(0.005)	(0.126)
(20) *DAX*	0.035	0.055	-0.149	0.580	0.301	-0.093	0.050	0.017	0.013	-0.060	0.123	-0.025
	(0.222)	(0.053)	(0.000)	(0.000)	(0.000)	(0.001)	(0.080)	(0.540)	(0.640)	(0.035)	(0.000)	(0.377)
(21) *MDAX*	0.018	0.068	-0.153	0.426	0.197	-0.100	0.092	0.003	-0.094	0.046	0.086	-0.091
	(0.518)	(0.017)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.915)	(0.001)	(0.104)	(0.002)	(0.001)
(22) *SDAX*	-0.014	0.056	-0.060	0.057	-0.066	-0.072	0.118	0.036	0.015	0.047	0.048	-0.046
	(0.629)	(0.049)	(0.036)	(0.044)	(0.020)	(0.012)	(0.000)	(0.200)	(0.589)	(0.097)	(0.094)	(0.109)
(23) *TECDAX*	-0.039	0.001	0.060	0.112	-0.060	-0.028	0.061	-0.048	0.013	0.139	-0.121	-0.114
	(0.172)	(0.975)	(0.036)	(0.000)	(0.035)	(0.317)	(0.031)	(0.093)	(0.644)	(0.000)	(0.000)	(0.000)

Table 6.4: Pearson Product-Moment Correlation Coefficients (continued)

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) *VOTEMB*											
(2) *VOTESB*											
(3) *DACC*											
(4) *SIZE*											
(5) *AGE*											
(6) *LOSS*											
(7) *ADJROA*											
(8) *ADJRET*											
(9) *CAR*											
(10) *ALTZ*											
(11) *LEV*											
(12) *BTM*											
(13) *BTMNEG*	1.000										
(14) *TSH*	0.029	1.000									
	(0.311)										
(15) *TURNOUTMB*	-0.056	0.401	1.000								
	(0.050)	(0.000)									
(16) *TURNOUTSB*	-0.039	0.402	0.449	1.000							
	(0.176)	(0.000)	(0.000)								
(17) *INDDMB*	0.135	0.035	0.105	0.127	1.000						
	(0.000)	(0.214)	(0.000)	(0.000)							
(18) *INDDSB*	0.016	0.008	0.158	0.137	0.720	1.000					
	(0.570)	(0.790)	(0.000)	(0.000)	(0.000)						
(19) *DELAY*	0.140	0.081	0.001	0.057	0.120	0.029	1.000				
	(0.000)	(0.004)	(0.972)	(0.044)	(0.000)	(0.316)					
(20) *DAX*	-0.039	-0.222	0.047	0.007	0.099	0.113	-0.055	1.000			
	(0.173)	(0.000)	(0.098)	(0.819)	(0.001)	(0.000)	(0.054)				
(21) *MDAX*	-0.040	-0.087	0.177	0.116	0.013	0.017	-0.080	-0.128	1.000		
	(0.161)	(0.002)	(0.000)	(0.000)	(0.658)	(0.542)	(0.005)	(0.000)			
(22) *SDAX*	-0.048	0.025	0.111	0.093	0.027	0.047	-0.062	-0.107	-0.158	1.000	
	(0.092)	(0.378)	(0.000)	(0.001)	(0.349)	(0.097)	(0.030)	(0.000)	(0.000)		
(23) *TECDAX*	-0.045	-0.155	-0.038	-0.083	-0.052	-0.057	-0.031	-0.101	-0.149	-0.125	1.000
	(0.113)	(0.000)	(0.186)	(0.004)	(0.070)	(0.044)	(0.269)	(0.000)	(0.000)	(0.000)	

Note: This table shows the Pearson product-moment correlation coefficients for the pooled data. All continuous variables other than *VOTEMB* and *VOTESB* are winsorized at the 1st and 99th percentiles. The numbers in parentheses indicate two-tailed p-values. The variables are as defined in Table 6.1.

6.4.2 Multivariate Analyses

The multivariate results presented in Table 6.5, column (1) reveal the following picture: Dissatisfaction with management board members is positively associated with the absolute value of discretionary accruals. The one-tailed p-value is 0.002, and therefore, the earnings quality proxy is significant at the 1% level. The coefficient is 1.5024, which means that increasing the absolute discretionary accruals by one standard deviation totaling 0.055 results in a more than 10% increase in the votes against the discharge of the management board for an average firm.[118]

The results shown in Table 6.5, column (2) regarding the determinants of the votes against the discharge of the supervisory board are weaker. The one-tailed p-value equals 0.082, and thus, the influence of the absolute discretionary accruals measures is only on the verge of significance at the 10% level. Moreover, the magnitude of the coefficient (0.8064) is just over half that of the coefficient of the management board regression.[119] The same applies to the economic effect, which equals an increase in votes against the discharge of the supervisory board of approximately 6% for an average firm if *DACC* increases by one standard deviation (0.055).[120] Implementing a seemingly unrelated regression model reveals that the coefficients are statistically different from one another.[121]

[118] This is based on a mean untransformed *VOTEMB* of 2.054. Solving $\ln(2.054 + \Delta VOTEMB{+}1) = \ln(2.054 + 1) + 0.055 \times 1.5024 = 1.1991$ results in the following calculation: $\Delta VOTEMB{=}\ e^{\ln(2.054+1)+0.055\times1.5024} - 1 - 2.054 = 0.2631$. This figure is equivalent to a change of $\frac{0.2631}{2.054} = 12.81\%$. Since the economic effect can be determined only indirectly due to the selected transformation of the dependent variable, this topic is addressed again in the additional analyses in subsection 6.5.2.

[119] This finding can also be observed throughout the robustness checks and the additional analyses.

[120] Having a mean untransformed *VOTESB* of 2.518, the change equals $\Delta VOTESB{=}\ e^{\ln(2.518+1)+0.055\times0.8064} - 1 - 2.518 = 0.1595$ or $\frac{0.1595}{2.518} = 6.33\%$, respectively.

[121] This finding also holds for the alternative measures of earnings quality, except analysts' forecast dispersion, which are presented in Table 6.6 and Table 6.7.

Table 6.5: OLS Regressions—Earnings Quality and Shareholders' Satisfaction with the Management Board and the Supervisory Board

	Dependent Variable					
	VOTEMB (1)			*VOTESB* (2)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
DACC	1.5024	0.5199	0.004	0.8064	0.5774	0.164
SIZE	-0.0269	0.0267	0.315	-0.0435	0.0311	0.163
AGE	0.0730	0.0422	0.085	0.1285	0.0460	0.006
LOSS	0.1745	0.0800	0.030	0.1899	0.0872	0.030
ADJROA	-0.1765	0.2146	0.411	-0.0351	0.2481	0.888
ADJRET	-0.1676	0.0566	0.003	-0.1363	0.0586	0.021
CAR	-0.1200	0.5099	0.814	0.2161	0.5251	0.681
ALTZ	-0.0132	0.0090	0.143	-0.0024	0.0085	0.781
LEV	0.2557	0.2154	0.236	0.1827	0.2307	0.429
BTM	0.2237	0.0917	0.015	0.1092	0.0847	0.199
BTMNEG	0.3040	0.3134	0.333	-0.0301	0.2994	0.920
TSH	-0.0040	0.0012	0.001	-0.0044	0.0014	0.002
TURNOUT	-0.0048	0.0013	0.000	-0.0055	0.0018	0.003
INDD	0.4188	0.1228	0.001	0.2679	0.1329	0.045
DELAY	0.3873	0.1274	0.003	0.3152	0.1303	0.016
DAX	0.2271	0.1641	0.168	0.3590	0.1907	0.061
MDAX	0.2656	0.1105	0.017	0.4100	0.1255	0.001
SDAX	0.1600	0.1038	0.124	0.3781	0.1371	0.006
TECDAX	0.0598	0.1062	0.574	0.1353	0.1329	0.309
Intercept	0.4355	0.2666	0.103	0.2983	0.2675	0.266
Industry Effects:		Yes			Yes	
Year Effects:		Yes			Yes	
Clustered by:		Firm			Firm	
n		1,237			1,237	
Adjusted R^2		0.246			0.165	
$Prob > F$		0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTE* are winsorized at the 1^{st} and 99^{th} percentiles. The reported p-values are two-tailed. The following regression models are tested for the satisfaction with the management board and the supervisory board, respectively: $VOTE_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LOSS_{it} + \beta_5 ADJROA_{it} + \beta_6 ADJRET_{it} + \beta_7 CAR_{it} + \beta_8 ALTZ_{it} + \beta_9 LEV_{it} + \beta_{10} BTM_{it} + \beta_{11} BTMNEG_{it} + \beta_{12} TSH_{it} + \beta_{13} TURNOUT_{it} + \beta_{14} INDD_{it} + \beta_{15} DELAY_{it} + \beta_{16} DAX_{it} + \beta_{17} MDAX_{it} + \beta_{18} SDAX_{it} + \beta_{19} TECDAX_{it} + \sum_{j=20}^{27} \beta_j IND_{it} + \sum_{j=28}^{32} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *VOTEMB* (*VOTESB*), *TURNOUTMB* (*TURNOUTSB*), and *INDDMB* (*INDDSB*) are included in the management board regression model in column (1) and the supervisory board regression model in column (2), respectively. The variables are as defined in Table 6.1.

In addition to the observed association of the experimental variable with shareholder votes against the discharge of the management board and the supervisory board, some additional findings are noteworthy. First, the firm's age and membership in one of the largest performance indices, particularly *MDAX*, has a negative impact on shareholder votes. A greater public presence and visibility and, thus, a higher risk of "vote-no" campaigns might be a reason for the observed relation.

Furthermore, and in line with the literature on shareholder voting in the U.S., the industry-adjusted one-year stock return (*ADJRET*) has a positive influence on shareholders' satisfaction with both the management board and the supervisory board. The opposite is true for the variable *LOSS*, which also indicates that performance matters to shareholders. If the firm's annual general meeting takes place later than expected, which could be interpreted as indicating some problems within the firm, shareholders' dissatisfaction is also higher. However, the industry-adjusted accounting-based performance (*ADJROA*) and the short-term cumulative abnormal stock return obtained from the market model (*CAR*) are not significantly associated with votes against the discharge of the board members.

The relative number of shares held strategically has a negative effect on votes against the discharge of board members. This could be explained by greater agency costs between shareholders and managers for higher levels of free float (number of shares not held strategically). Finally, dissenting votes are lower for annual general meetings with higher voter turnout—votes against losing relative power—and higher if there is an individual discharge of board members.

In summary, the empirical findings support the assumption that the outcome of votes to discharge board members in Germany represents shareholders' satisfaction, which is comparable to other votes around the world. More important, earnings quality—which is measured by the magnitude of discretionary accruals—seems to be a material driver of shareholders' dissatisfaction with the management board and the supervisory board. However, the results regarding the discharge of the supervisory board are not as strong in magnitude and significance as in the management board model. This could be interpreted to mean that shareholders especially blame the management board for inferior earnings quality caused by discretionary accruals.

6.5 Additional Analyses

6.5.1 Measurement of Earnings Quality

6.5.1.1 Alternative Approaches to Calculate Absolute Discretionary Accruals

To ensure that the findings of this study are not driven by the choice of a particular model to calculate discretionary accruals, alternative approaches to calculate absolute discretionary accruals are examined.[122] Thus, the normal portion of accruals is estimated based on the cross-sectional industry-year-specific regression model following Jones (1991), as well as the modified Jones model by Dechow and Sloan (1995). To consider firm-specific factors, the performance-adjusted modified Jones model used throughout the main analyses is estimated while including firm and year fixed effects following Kothari et al. (2016). Although the main conclusions of this study are not sensitive to the different specifications, in contrast to the results regarding the dissatisfaction with the members of the management board, the one-tailed p-values of the coefficients on $DACC$ in the supervisory board models total only approximately 0.15. The application of the procedure estimating discretionary accruals based on samples with similarity in firm size instead of industry, as proposed by Ecker et al. (2013), leads to comparable results.

6.5.1.2 Alternative Measures of Earnings Quality

Although the use of discretionary accrual-based measures of earnings quality is a common approach in the accounting literature, it is not free from criticism (cf. Dechow et al. 2010). Therefore, three alternative proxies are used to measure earnings quality. First, the absolute value of total accruals scaled by lagged total assets ($TACC$), which might be more accessible to shareholders, is used (Cameran and Francis 2017; Dechow et al. 2011). Since earnings quality is an important consideration for financial analysts (Salerno 2014), the two other proxies are linked to analysts' forecast accuracy and analysts' forecast dispersion (Bryan and Tiras 2007; Lang and Lundholm 1996; Lang et al. 2003; Leuz and Wysocki 2016). On the one hand, the absolute value of the mean analysts' earnings per share forecast error deflated by stock price ($FCERROR$) might be related to the reliability of the reported earnings.[123] On the other hand, the standard

[122] For the sake of brevity, the results are not tabulated in this section unless described otherwise.
[123] Using the median analysts' earnings per share forecast instead leads to similar results.

deviation of the one-year-forward analysts' earnings per share forecasts deflated by the stock price (*EPS1SD*) should additionally reflect disagreement among analysts as an indicator of information asymmetries (Krishnaswami and Subramaniam 1999; Leuz 2003). Since all three variables are inverse measures of earnings quality, a positive association with shareholder votes against the discharge of the members of the management board and the supervisory board would be in line with the main results.

Table 6.6 and Table 6.7 show the corresponding results, and the coefficients of the earnings quality proxies have the predicted positive sign in all models. Apart from the impact of *TACC* on *VOTESB*, considering one-tailed p-values, all effects are significant at the 5% level or better. Therefore, the alternative measures provide triangulating evidence for this study's assertion that earnings quality is relevant to shareholders and influences their satisfaction. The finding that shareholders seem to predominantly hold the management board responsible for earnings quality is also supported.

Table 6.6: OLS Regressions—Earnings Quality and Shareholders' Satisfaction with the Management Board: Alternative Measures of Earnings Quality

	Dependent Variable = *VOTEMB*								
	Earnings Quality Proxy: *TACC* (1)			Earnings Quality Proxy: *FCERROR* (2)			Earnings Quality Proxy: *EPS1SD* (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
EQ	1.1785	0.4208	0.005	2.2933	0.6528	0.001	4.9194	1.8626	0.009
Intercept:		Yes			Yes			Yes	
Control Variables:		Yes			Yes			Yes	
Industry Effects:		Yes			Yes			Yes	
Year Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		1,237			1,100			968	
Adjusted R^2		0.248			0.228			0.206	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTEMB* are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested: $VOTEMB_{it} = \alpha_0 + \beta_1 EQ_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LOSS_{it} + \beta_5 ADJROA_{it} + \beta_6 ADJRET_{it} + \beta_7 CAR_{it} + \beta_8 ALTZ_{it} + \beta_9 LEV_{it} + \beta_{10} BTM_{it} + \beta_{11} BTMNEG_{it} + \beta_{12} TSH_{it} + \beta_{13} TURNOUTMB_{it} + \beta_{14} INDDMB_{it} + \beta_{15} DELAY_{it} + \beta_{16} DAX_{it} + \beta_{17} MDAX_{it} + \beta_{18} SDAX_{it} + \beta_{19} TECDAX_{it} + \sum_{j=20}^{27} \beta_j IND_{it} + \sum_{j=28}^{32} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *EQ* represents three different alternative earnings quality proxies: column (1) *TACC*, column (2) *FCERROR*, and column (3) *EPS1SD*. The variables are as defined in Table 6.1.

Table 6.7: OLS Regressions—Earnings Quality and Shareholders' Satisfaction with the Supervisory Board: Alternative Measures of Earnings Quality

	Dependent Variable = *VOTESB*								
	Earnings Quality Proxy: *TACC* (1)			Earnings Quality Proxy: *FCERROR* (2)			Earnings Quality Proxy: *EPS1SD* (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
EQ	0.4747	0.3991	0.235	1.0093	0.5491	0.067	4.0375	1.9965	0.044
Intercept:		Yes			Yes			Yes	
Control Variables:		Yes			Yes			Yes	
Industry Effects:		Yes			Yes			Yes	
Year Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		1,237			1,100			968	
Adjusted R^2		0.164			0.166			0.177	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTESB* are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested: $VOTESB_{it} = \alpha_0 + \beta_1 EQ_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LOSS_{it} + \beta_5 ADJROA_{it} + \beta_6 ADJRET_{it} + \beta_7 CAR_{it} + \beta_8 ALTZ_{it} + \beta_9 LEV_{it} + \beta_{10} BTM_{it} + \beta_{11} BTMNEG_{it} + \beta_{12} TSH_{it} + \beta_{13} TURNOUTSB_{it} + \beta_{14} INDDSB_{it} + \beta_{15} DELAY_{it} + \beta_{16} DAX_{it} + \beta_{17} MDAX_{it} + \beta_{18} SDAX_{it} + \beta_{19} TECDAX_{it} + \sum_{j=20}^{27} \beta_j IND_{it} + \sum_{j=28}^{32} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *EQ* represents three different alternative earnings quality proxies: column (1) *TACC*, column (2) *FCERROR*, and column (3) *EPS1SD*. The variables are as defined in Table 6.1.

6.5.2 Measurement of Shareholders' Satisfaction

As mentioned in the description of the research design, the empirical measure of shareholders' satisfaction is computed by a log transformation of the percentage of votes against the discharge of the board members in order to address the high skewness of the voting outcome. However, the main regressions are replicated using untransformed voting outcomes, and the results remain unchanged.[124] In order to lose no observations of zero votes against the discharge of the board, the natural logarithm of 1 plus the percentage of votes against the discharge of the board is used in the analyses to measure shareholders' satisfaction. Re-estimating the main model using a simple log transformation does not alter the stated conclusions. However, the coefficient of *DACC* in the supervisory board model is no longer significant (one-tailed p-value of 0.106), which might be a result of the sample drop of approximately 100 observations.

Despite the supposed methodical subordination, the two modified approaches allow a direct interpretation of the economic influence. The economic effects are to be considered exemplarily for the management board. The model with untransformed voting outcomes reveals an increase in votes against the discharge of the management board of almost 1 percentage point with an increase in the variable of interest by one standard deviation (coefficient of *DACC* equals 18.0952). The simple log transformation shows for this case an increase of 21.23% (coefficient of *DACC* totals 3.8602).

Additionally, two further model specifications are tested and show qualitatively identical results. First, a variable indicating whether the voting dissent is above the mean observation is generated, and a logistic regression model is estimated. Second, a tobit regression is conducted using a dependent variable that divides the voting outcome into different groups (less than 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10% and more than 10% of votes against the discharge of the board members). Thus, the findings are not dependent on the different specifications, and the skewness of the voting variable should not be considered particularly problematic.

Some studies treat votes abstain as an expression of shareholders' dissatisfaction by including them when calculating the voting variable (e.g., Brickley et al. 1988; Cunningham 2017; Dao et al. 2008; Sainty et al. 2002). This approach does not seem appropriate for the German setting, as the number of abstentions is not re-

[124] Implementing a tobit regression (Tobin 1958) leads to qualitatively identical results (cf. Balsam et al. 2016).

ported consistently and, therefore, votes abstain are only available for parts of the sample. Nevertheless, running the regressions when including (available) abstentions indicates that the results regarding the influence of *DACC* on shareholders' satisfaction with the supervisory board are sensitive to this modification. In contrast, the findings in the management board regression and, in turn, the main conclusions drawn in this study remain unchanged.

6.5.3 Alternative Model Specifications

In addition to the sensitivity checks with regard to the used time and industry fixed effects, measurement of specific control variables, clustering method, and winsorization already mentioned in footnote remarks in the variable description of the research design in section 6.3, further model specifications are tested to evaluate the robustness of this study's findings and related conclusions.

In particular, the following analyses should address potential endogeneity problems or omitted variables to enhance confidence in the results. First of all, a change analysis is performed by re-running the main regressions in which each of the variables equals the change compared to the previous year (Ettredge et al. 2014; Kim et al. 2012). Performing the change analysis shows consistent results. Furthermore, the lagged value of the dependent variable is added to the regression as an independent variable. This approach can be used to deal with simultaneously determined associations (Klein 1998; Weir et al. 2002). Moreover, it also controls for potential fundamental long-term shareholder dissatisfaction. This procedure shows a significant association of the lagged variable with the present voting outcome but, more importantly, even increases the significance levels of the variable of interest in both the management board and the supervisory board model. Moreover, to control for time-invariant omitted variables, firm fixed effects are included (Chenhall and Moers 2007; Roberts and Whited 2013). This approach reveals robust results, at least for the management board regression. Finally, to consider the sentiment at the annual general meeting and the overall shareholders' satisfaction, two different extensions are made to the model: (1) *VOTESB* (*VOTEMB*) is included as an independent variable in the management board (supervisory board) regression and (2) the average voting outcome from all other annual mandatory votes that took place at the annual general meeting is controlled for, in addition to the

respective discharge vote.[125] In all cases, a significant positive influence of the added variable can be observed in the management and the supervisory board regression. The measure of earnings quality ($DACC$), on the other hand, is significantly associated only with the proxy for shareholders' satisfaction with the management board ($VOTEMB$). The findings do not contradict the conclusion that earnings quality seems to be relevant to shareholders. Moreover, they are in line with the story told by this study that shareholders primarily hold the management board accountable for insufficient earnings quality.

Besides alternative specifications regarding the models, sensitivity checks should also concern the sample composition. First of all, this study's findings remain robust when a balanced sample is used. Furthermore, firm-year observations are eliminated in which the discharge of the board members is voted for without exception. Such voting behavior could indicate general shareholder indifference, and therefore, the annual general meeting might not be a functioning corporate governance instrument in this case. Examining the modified sample leads to a considerable increase in significance levels in both models, which supports the assumption made. Eventually, resampling and using bootstrap standard errors does not alter the results.[126]

6.5.4 The Influence of Corporate Governance Factors

Cohen et al. (2004, 87) motivate their literature review by the following statement: "One of the most important functions that corporate governance can play is in ensuring the quality of the financial reporting process." Therefore, it should be ruled out that the variable of interest does not purely capture corporate governance effects. Thus, six corporate governance factors are included in the model in addition to firm size and index membership.

The first variable (AC) concerns the existence of an audit committee whose establishment is not obligatory (§ 107 (3) AktG) but is specifically recommended by

[125] With regard to the regression with the dependent variable $VOTEMB$ ($VOTESB$), the mean value of the voting results regarding the discharge of the supervisory board (management board), the auditor ratification vote and, if applicable, the appropriation of the balance sheet profit, is used as a control variable. The influence on the results remains unchanged if the minimum or maximum value is used to capture the base or upper limit of the general shareholder sentiment.

[126] This approach can provide correct standard errors even for data that deviate from the normal distribution (Deis and Hill 1998; Marais 1984). A number of 1,000 bootstrap replications is chosen and should provide reliable standard errors (Wooldridge 2016).

the German Corporate Governance Code.[127] Since an audit committee strengthens the monitoring of the financial reporting process (Albersmann and Hohenfels 2017; Cohen et al. 2004; McMullen 1996) an indicator variable—equal to 1 if an audit committee is established, and 0 otherwise—is introduced (Ratzinger-Sakel 2013). Moreover, it is controlled for further characteristics of the management board and the supervisory board (Brunninge et al. 2007; Ding et al. 2010; Ferris et al. 2003; Larcker et al. 2007): the number of management board members (*MBSIZE*), the number of supervisory board members (*SBSIZE*), and the number of supervisory board meetings (*MEETINGS*). While large board size—especially that of the supervisory board—is considered negative regarding its effectiveness and, hence, as an indicator of weak corporate governance (Larcker et al. 2007; Yermack 1996), the number of supervisory board meetings should indicate the activeness and efforts in monitoring the management, and therefore, are considered as a sign of good corporate governance (Brunninge et al. 2007; Larcker et al. 2007; Vafeas 1999). Furthermore, the variable *SOP* indicates whether the firm has adopted a say-on-pay vote in one of the three most recent annual general meetings.[128] This variable is included in the model because the say-on-pay vote is regarded as a monitoring mechanism that gives shareholders a voice on management remuneration (Cuñat et al. 2016). Finally, *CGDEVIATION* represents the number of deviations from the German Corporate Governance Code, and therefore, reflects the willingness of the company to comply with the principles of good corporate governance (Kaspereit et al. 2015; Kaspereit et al. 2017).[129]

[127] See paragraph 5.3.2 of the German Corporate Governance Code; `https://www.dcgk.de/en/code.html`; accessed on October 1, 2018.

[128] The first possible adoption of a say-on-pay vote is supposed to be during the annual general meeting for the fiscal year 2009, which is the start of the sample period. Since the opportunity to have the remuneration system approved by the shareholders was explicitly enrolled in the law in 2010 (§ 120 (4) AktG), this annual general meeting season was also the starting point for many companies to adopt say-on-pay.

[129] See `https://www.dcgk.de/en/code.html`; accessed on October 1, 2018.

Table 6.8: OLS Regressions—Corporate Governance Factors and Shareholders' Satisfaction with the Management Board and the Supervisory Board

	Dependent Variable					
	VOTEMB (1)			*VOTESB* (2)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
DACC	1.7228	0.5691	0.003	0.9703	0.6456	0.134
AC	-0.0154	0.0805	0.848	0.0280	0.0924	0.762
MBSIZE	-0.0105	0.0234	0.655	-0.0198	0.0252	0.433
SBSIZE	-0.0068	0.0112	0.547	0.0237	0.0119	0.047
MEETINGS	-0.0063	0.0122	0.605	0.0133	0.0124	0.281
SOP	0.0401	0.0528	0.448	-0.0226	0.0672	0.737
CGDEVIATION	0.0109	0.0090	0.228	0.0416	0.0124	0.001
Intercept:		Yes			Yes	
Control Variables:		Yes			Yes	
Industry Effects:		Yes			Yes	
Year Effects:		Yes			Yes	
Clustered by:		Firm			Firm	
n		1,125			1,125	
Adjusted R^2		0.255			0.182	
$Prob > F$		0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTE* are winsorized at the 1^{st} and 99^{th} percentiles. The reported p-values are two-tailed. The following regression models are tested for the satisfaction with the management board and the supervisory board, respectively: $VOTE_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 AC_{it} + \beta_3 MBSIZE_{it} + \beta_4 SBSIZE_{it} + \beta_5 MEETINGS_{it} + \beta_6 SOP_{it} + \beta_7 CGDEVIATION_{it} + \beta_8 SIZE_{it} + \beta_9 AGE_{it} + \beta_{10} LOSS_{it} + \beta_{11} ADJROA_{it} + \beta_{12} ADJRET_{it} + \beta_{13} CAR_{it} + \beta_{14} ALTZ_{it} + \beta_{15} LEV_{it} + \beta_{16} BTM_{it} + \beta_{17} BTMNEG_{it} + \beta_{18} TSH_{it} + \beta_{19} TURNOUT_{it} + \beta_{20} INDD_{it} + \beta_{21} DELAY_{it} + \beta_{22} DAX_{it} + \beta_{23} MDAX_{it} + \beta_{24} SDAX_{it} + \beta_{25} TECDAX_{it} + \sum_{j=26}^{33} \beta_j IND_{it} + \sum_{j=34}^{38} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *VOTEMB* (*VOTESB*), *TURNOUTMB* (*TURNOUTSB*), and *INDDMB* (*INDDSB*) are included in the management board regression model in column (1) and the supervisory board regression model in column (2), respectively. The variables are as defined in Table 6.1.

A look at the results presented in Table 6.8 shows the following picture: The variable of interest (*DACC*) is still significant in both models considering one-tailed p-values (0.001 in the management board regression and 0.067 in the supervisory board model). Therefore, the stated conclusions regarding the influence of earnings quality on shareholders' satisfaction with the members of the company's board remain unchanged. Furthermore, it is worth mentioning that the variable *CGDEVIATION* has a significant effect on shareholders' satisfaction with the supervisory board in the expected direction.[130] The positive coefficient on *CGDEVIATION* (0.0416) implies that shareholders blame the supervisory board for deviations from the German Corporate Governance Code through dissenting votes.

The coefficient of *CGDEVIATION* in the management board regression is considerably lower (0.0109) and insignificant (two-tailed p-value of 0.228). This finding could be interpreted to mean that shareholders hold the supervisory board responsible for fulfilling the principles of the German Corporate Governance Code. In contrast, shareholders attribute low earnings quality mainly to management, which could indicate that insufficient earnings quality is perceived as opportunistic management behavior. Besides, shareholders might have the opinion that in contrast to safeguard adequate earnings quality, it should be more feasible for the supervisory board to ensure compliance with corporate governance guidelines.

6.5.5 Moderating Effects on the Influence of Earnings Quality on Shareholders' Satisfaction

6.5.5.1 Company's Performance

To validate the possibility that earnings quality, not unobservable factors, drives the results, different situations need to be identified in which earnings quality should have a comparatively more or less strong influence on shareholders' satisfaction.

Since findings of prior works (e.g., Cai et al. 2009), as well as this study, show that a company's performance has a positive impact on shareholders' satisfaction with board members, some might argue that shareholders of well-performing companies are more likely to be willing to tolerate lower levels of earnings quality. Thus,

[130] All other variables except for *SBSIZE* in the supervisory board regression are not significantly different from zero. The positive coefficient (0.0237) indicates that as the supervisory board grows in size, the shareholders' dissatisfaction with the supervisory board increases. This finding supports the notion that large boards are less effective in monitoring than smaller boards (Eisenberg et al. 1998; Ferris et al. 2003; Sauerwald et al. 2016; Yermack 1996).

POSRET is introduced and equals 1 for companies performing better than the industry median (synonymous with a positive *ADJRET*), and 0 otherwise.[131] The results tabulated in Table 6.9 and Table 6.10 support the reasoning mentioned above since a relatively good performance has an attenuating effect on the association between earnings quality and shareholders' satisfaction with the company's board members.

6.5.5.2 Company's Information Environment

In addition to its performance, the company's information environment should affect the association between earnings quality and shareholders' satisfaction. In cases of a better information environment, shareholders should be less reliant on financial reports and, in turn, sufficient earnings quality. Moreover, agency costs might be higher for firms with less information and, therefore, weaker monitoring of the management (Fernando et al. 2010). To examine the moderating effect of the information environment an operational measure must be employed. Therefore, (*ANALYST*)—i.e., the natural logarithm of 1 plus the number of analysts following the firm at the date of the annual general meeting—is used to capture the company's information environment (Daske et al. 2013; Gleason and Lee 2003; Lang et al. 2003; O'Brien and Bhushan 1990).[132]

Table 6.9 and Table 6.10 provide evidence that there is a mitigating effect of the company's information environment on the impact of earnings quality on shareholders' satisfaction with the members of the management board and the supervisory board. Since this is in line with the story told by this study, it corroborates the view that earnings quality is what matters to shareholders and influences their satisfaction with the members of the company's board.

[131] Market-based performance is chosen due to the significant effect on shareholders' satisfaction (cf. Table 6.5). However, untabulated evidence using the accounting-based performance measure (*ADJROA*) does not alter the results.

[132] Further sensitivity checks reveal qualitatively similar results if firm size is used as the proxy for the company's information environment (Atiase 1985; Collins et al. 1987).

Table 6.9: OLS Regressions—Earnings Quality and Shareholders' Satisfaction with the Management Board: Moderating Effects

	Dependent Variable = *VOTEMB*								
	Moderator: *POSRET* (1)			Moderator: *ANALYST* (2)			Moderator: *AC* (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
DACC	2.3214	0.6579	0.000	4.3717	1.3285	0.001	2.2850	0.7767	0.004
MODERATOR	0.1511	0.0603	0.013	0.1479	0.0856	0.085	0.0908	0.0861	0.293
DACC×MODERATOR	-2.2091	0.7764	0.005	-1.8355	0.6156	0.003	-1.9747	1.0184	0.054
Intercept:		Yes			Yes			Yes	
Control Variables:		Yes			Yes			Yes	
Industry Effects:		Yes			Yes			Yes	
Year Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		1,237			1,152			1,237	
Adjusted R^2		0.250			0.235			0.249	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTEMB* are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested: $VOTEMB_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 MODERATOR_{it} + \beta_3 DACC_{it} \times MODERATOR_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 LOSS_{it} + \beta_7 ADJROA_{it} + \beta_8 ADJRET_{it} + \beta_9 CAR_{it} + \beta_{10} ALTZ_{it} + \beta_{11} LEV_{it} + \beta_{12} BTM_{it} + \beta_{13} BTMNEG_{it} + \beta_{14} TSH_{it} + \beta_{15} TURNOUTMB_{it} + \beta_{16} INDDMB_{it} + \beta_{17} DELAY_{it} + \beta_{18} DAX_{it} + \beta_{19} MDAX_{it} + \beta_{20} SDAX_{it} + \beta_{21} TECDAX_{it} + \sum_{j=22}^{29} \beta_j IND_{it} + \sum_{j=30}^{34} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *MODERATOR* represents the variables *POSRET* in column (1), *ANALYST* in column (2), and *AC* in column (3). The variables are as defined in Table 6.1.

Table 6.10: OLS Regressions—Earnings Quality and Shareholders' Satisfaction with the Supervisory Board: Moderating Effects

	Dependent Variable = *VOTESB*								
	Moderator: *POSRET* (1)			Moderator: *ANALYST* (2)			Moderator: *AC* (3)		
Variable	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**	**Coefficient**	**Robust Std. Err.**	**p-value**
DACC	1.4415	0.7453	0.054	2.7601	1.3598	0.043	0.9356	0.7920	0.239
MODERATOR	0.0663	0.0836	0.429	0.1285	0.0924	0.166	0.0608	0.0937	0.517
DACC×MODERATOR	-1.6868	0.8921	0.060	-1.2713	0.6153	0.040	-0.2367	1.1660	0.839
Intercept:		Yes			Yes			Yes	
Control Variables:		Yes			Yes			Yes	
Industry Effects:		Yes			Yes			Yes	
Year Effects:		Yes			Yes			Yes	
Clustered by:		Firm			Firm			Firm	
n		1,237			1,152			1,237	
Adjusted R^2		0.166			0.170			0.164	
$Prob > F$		0.000			0.000			0.000	

Note: This table presents the results of the cross-sectional OLS regressions based on the pooled data. The regression models include industry and year fixed effects, and standard errors are clustered by firm. All continuous variables other than *VOTESB* are winsorized at the 1st and 99th percentiles. The reported p-values are two-tailed. The following regression models are tested: $VOTESB_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 MODERATOR_{it} + \beta_3 DACC_{it} \times MODERATOR_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 LOSS_{it} + \beta_7 ADJROA_{it} + \beta_8 ADJRET_{it} + \beta_9 CAR_{it} + \beta_{10} ALTZ_{it} + \beta_{11} LEV_{it} + \beta_{12} BTM_{it} + \beta_{13} BTMNEG_{it} + \beta_{14} TSH_{it} + \beta_{15} TURNOUTSB_{it} + \beta_{16} INDDSB_{it} + \beta_{17} DELAY_{it} + \beta_{18} DAX_{it} + \beta_{19} MDAX_{it} + \beta_{20} SDAX_{it} + \beta_{21} TECDAX_{it} + \sum_{j=22}^{29} \beta_j IND_{it} + \sum_{j=30}^{34} \beta_j YEAR_{it} + \varepsilon_{it}$, where *IND* is a set of eight industry dummies, and *YEAR* represents five year dummies. *MODERATOR* represents the variables *POSRET* in column (1), *ANALYST* in column (2), and *AC* in column (3). The variables are as defined in Table 6.1.

6.5.5.3 Audit Committee Existence

Finally, it is examined whether the existence of an audit committee has a moderating effect on the association of earnings quality and shareholders' satisfaction with the management board and the supervisory board. As in subsection 6.5.4, the indicator variable (AC)—equal to 1 if an audit committee exists, and 0 otherwise—is used. With regard to the expectations regarding the moderating effect, however, it must be differentiated between the two parts of the company's board.

Both agency theory and empirical evidence suggest that the presence of an audit committee improves the monitoring function of the supervisory board (Cohen et al. 2004; Dechow et al. 2010; Fama 1980; Fama and Jensen 1983). In particular, an existing audit committee should be more effective in constraining the management's opportunistic accounting policy. This is also supported by the findings of the recent study of Albersmann and Hohenfels (2017) in the German context. Accordingly, an audit committee as a subcommittee of the supervisory board may contribute to safeguarding the reliability of the financial reporting information (McMullen 1996).

However, it remains questionable how the existence of an audit committee could affect the association of earnings quality and shareholders' satisfaction with the supervisory board. On the one hand, it can be assumed that the presence of an audit committee could have a mitigating effect, as the supervisory board has attempted to fulfill its duty to monitor the financial reporting process in the best possible way. On the other hand, shareholders' dissatisfaction with the supervisory board due to insufficient earnings quality could be exacerbated. This argument could be explained by the fact that the shareholders can assume that the supervisory board has sufficient expertise regarding the financial reporting process due to the existence of an audit committee. The consequence might be that the audit committee and, therefore, supervisory board members are more likely to be held responsible by the shareholders for earnings quality, as also indicated by the evidence of Gal-Or et al. (2018).

The latter argument could, in turn, lead to the consequence that the management board members are held less accountable for earnings quality. Furthermore, a supposed low earnings quality could be legitimized by complying with good governance principles. The audit committee would thus have an assurance function. Consequently, the presence of an audit committee would have an attenuating moderating effect on the association of earnings quality and shareholders' satisfaction with the management board.

The empirical analyses in Table 6.9 and Table 6.10 reveal the following picture: The coefficient of the interaction term of $DACC$ and AC is negative (-1.9747) and significant (two-tailed p-value of 0.054) in the management board regression. The mitigating moderating effect of the existence of an audit committee supports the assurance function reasoning. The results regarding shareholders' satisfaction with the supervisory board are not that clear since the related coefficient is insignificant. This finding could be explained by the fact that the above arguments counterbalance each other. Nevertheless, the results regarding the supervisory board do not offer substance for further interpretation. Overall, the evidence supports the conclusions of this study, especially with regard to the postulated influence of earnings quality on shareholders' satisfaction with the management board.

6.6 Summary and Limitations

Since there is little direct evidence on shareholders' perceptions of the relevance of earnings quality, this study aims to examine whether earnings quality matters to shareholders and is related to their satisfaction with the management board and/or the supervisory board. For this purpose, the results of the shareholder voting regarding the discharge of the management board and the supervisory board at German annual general meetings are examined. The empirical analyses show that shareholders' dissatisfaction—obtained from the shareholder vote on the discharge of the board—is positively associated with the magnitude of discretionary accruals—an inverse measure of earnings quality.

Therefore, the quality of earnings seems to be such an important matter for shareholders that it affects their voting decisions. Combined with the findings regarding company visibility, performance, and ownership characteristics, this result corroborates the view that shareholder votes, as a measure of shareholders' satisfaction, "should not be considered insignificant" (Sainty et al. 2002, 113) and represent a material mechanism of corporate governance (Cai et al. 2009; Iliev et al. 2015). Moreover, the results regarding the discharge of the supervisory board are less pronounced relative to those regarding the management board. The evidence might imply that shareholders primarily hold the management board responsible for earnings quality. These insights could inform shareholders and the representatives of the company and should be crucial for the accounting and corporate governance literature and future regulation.

The empirical evidence suggests that earnings quality is related to shareholders' satisfaction and, hence, is relevant to shareholders. Therefore, the study responds to the suggestion of Basu (2012) in his commentary on the accounting literature to address fundamental accounting questions in future research and the call of Cai et al. (2010) for further research on shareholder voting in international settings. In summary, this study's findings emphasize not only the relevance of the literature on shareholder voting but also—and potentially more importantly—the relevance of accounting research. In particular, the insights into shareholders' (negative) perceptions regarding discretionary accruals emphasizes the value of research on the definitions or measures of earnings quality.

This study is also subject to some limitations, such as the usage of discretionary accrual-based measures of earnings quality. Although this approach is common in

the accounting literature, it is not free from criticism and might suffer from measurement errors (cf. Dechow et al. 2010). However, this study tries to alleviate the existing problems by using various approaches to calculate absolute discretionary accruals (Albersmann and Hohenfels 2017). Furthermore, the additional analyses using other proxies of earnings quality provide triangulating results. Eventually, the observed moderating effects of the company's performance, the company's information environment, and the existence of an audit committee might support the story told by this study.

A further point to be mentioned is that this study investigates the association between shareholders' satisfaction and proxies of actual earnings quality. Additionally, it would be possible to use a measure of perceived earnings quality as the variable of interest instead. The literature commonly uses short window event studies to measure perceived earnings quality based on the ERC (DeFond and Zhang 2014; Gaynor et al. 2016; Kothari 2001). However, due to the underlying research design of an event study, problems would arise in the determination of an independent experimental variable to test the developed hypotheses. Moreover, this approach could lead to serious endogeneity problems due to an omitted variable bias, making casual inferences even more problematic (Gow et al. 2016).

Furthermore, it is left to future research to further differentiate between circumstances in which the management board or the supervisory board is blamed for insufficient earnings quality. For example, auditor expertise and independence could be a crucial factor in the determination of shareholders' voting decisions. The results are in the first instance valid for the observed companies and the chosen sample period. Besides, this study focuses on the perceptions of shareholders, and it would be interesting to examine the opinions of other stakeholders of a company. Finally, this study focuses on the German setting, which, despite the corresponding benefits, may be subject to limitations in terms of external validity. However, the evidence regarding the control variables is comparable to those of director election, say-on-pay or auditor ratification votes in other countries.

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Eidesstattliche Erklärung

Ich erkläre, dass ich die Dissertation eigenständig, das heißt insbesondere ohne Hilfe einer kommerziellen Promotionsberatung angefertigt und außer den im Schrifttumsverzeichnis angegebenen Hilfsmitteln keine weiteren verwendet habe. Ich habe zudem sämtliche Koautorenschaften an Studien, die in diese Dissertation eingeflossen sind, und alle Stellen, die aus dem Schrifttum ganz oder annähernd entnommen sind, als solche kenntlich gemacht. Hiermit erkläre ich außerdem, dass ich meine Dissertation nicht bereits bei einem früheren Prüfungsverfahren eingereicht habe.

Würzburg, den 08.10.2019 .....

Sven Hörner

Lebenslauf

Sven Hörner, geboren am 10.12.1987 in Würzburg, legte im Jahr 2007 seine allgemeine Hochschulreife am Dietrich-Bonhoeffer-Gymnasium in Wertheim ab. Von 2008 bis 2011 studierte Sven Hörner an der Julius-Maximilians-Universität Würzburg im Bachelorstudiengang „Wirtschaftswissenschaften“ und schloss im Jahr 2013 das Masterstudium „Business Management“ mit der Vertiefung „Finance, Accounting and Taxation“ als Jahrgangsbester ab. Im Rahmen seines Studiums war Sven Hörner als wissenschaftliche Hilfskraft an verschiedenen Lehrstühlen tätig und übte über fünf Jahre ein Ehrenamt als Tutor im Wohnheim „Haus Berlin“ des Studentenwerks Würzburg aus.

Im Anschluss war Sven Hörner Doktorand und wissenschaftlicher Mitarbeiter am Lehrstuhl für BWL, Wirtschaftsprüfungs- und Beratungswesen sowie am Lehrstuhl für BWL, Controlling und Interne Unternehmensrechnung der Julius-Maximilians-Universität Würzburg. Im Rahmen dieser Tätigkeit betreute er diverse Lehrveranstaltungen sowie zahlreiche Seminar- und Abschlussarbeiten in den Bereichen Rechnungslegung, Wirtschaftsprüfung und Controlling.

Seine Forschung beschäftigt sich mit den Wahrnehmungen der Aktionäre hinsichtlich der Qualität der Rechnungslegung und der Abschlussprüfung. Seine Forschungsprojekte stellte er auf zahlreichen Konferenzen in Deutschland, Österreich, Schweiz, den Niederlanden, Belgien, England, Schottland, Zypern und den USA vor. Weitere Auslandserfahrung sammelte Sven Hörner während seines Forschungsaufenthalts bei Herrn Professor Robert W. Knechel an der Fisher School of Accounting der University of Florida sowie einer Erasmus Dozentenmobilität an der Universität Parma.